

SUPPLEMENT.

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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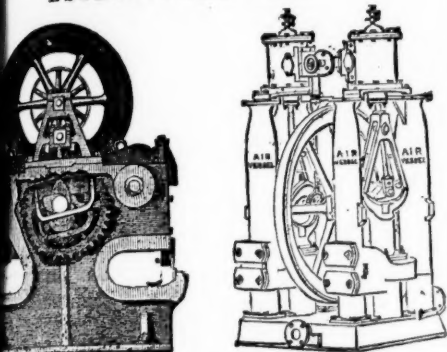
1877.—Vol. XLVII.

LONDON, SATURDAY, APRIL 7, 1877.

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Useful for wet or dry ground, and effective in Tropical or Polar Climates.

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Messrs. Benfield, Smith, and Co., is now enabled to offer Fuse of every variety of
quality, of best quality, and at moderate prices.

Free Samples and Sample Cards may be had on application at the above address.

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PARIS, 1867.
BRONZE MEDAL, 1867.



ORDER OF THE CROWN OF PRUSSIA.



FALMOUTH,
SILVER MEDAL, 1867.

A DIPLOMA—HIGHEST OF ALL AWARDS—given by the
Geographical Congress, Paris, 1875—M. Favre, Contractor, having
exhibited the McKean Drill alone as the MODEL BORING MACHINE
for the St. GOTHARD TUNNEL.

SILVER MEDAL of the Highland and West of Scotland
Agricultural Society, 1875—HIGHEST AWARD.

At the south end of the St. Gothard Tunnel, where

THE MCKEAN ROCK DRILLS

Are exclusively used, the advance made during eight consecu-
tive weeks, ending February 7, was 24-90, 27-60, 24-80, 26-10,
28-30, 27-10, 28-40, 28-70 metres. Total advance of south head-
ing during January was 121-30 metres, or 133 yards.

In a series of comparative trials made at the St. Gothard Tun-
nel, the McKean Rock Drill continued to work until the pres-
sure was reduced to one-half atmosphere (7½ lbs.), showing
almost the entire motive force to be available for the blow
against the rock—a result of itself indicating many advantages.

The GREAT WESTERN RAILWAY has adopted these
Machines for the SEVERN TUNNEL; the LONDON AND
NORTH-WESTERN RAILWAY for the FESTINIOG TUN-
NEL; and the BRITISH GOVERNMENT for several Public
Works. A considerable number of Mining Companies are now
using them. Shafts and Galleries are driven at from three to
six times the speed of hand labour, according to the size and
number of machines employed, and with important saving in
cost. The ratio of advantage over hand labour is greatest
where the rock is hardest.

These Machines possess many advantages, which give them
a value unapproached by any other system of Boring Machine.

THE MCKEAN ROCK DRILL IS ATTAINING GENERAL
USE THROUGHOUT THE WORLD FOR MINING, TUN-
NELLING, QUARRYING, AND SUB-MARINE BORING.

The MCKEAN ROCK DRILLS are the most powerful—the
most portable—the most durable—the most compact—of the
best mechanical device. They contain the fewest parts—have
no weak parts—act without SHOCK upon any of the operat-
ing parts—work with a lower pressure than any other Rock
Drill—may be worked at a higher pressure than any other
—may be run with safety to FIFTEEN HUNDRED STROKES
PER MINUTE—do not require a mechanic to work them—are
the smallest, shortest, and lightest of all machines—will give
the longest feed without change of tool—work with long or
short stroke at pleasure of operator.

The SAME Machine may be used for sinking, drifting, or
open work. Their working parts are best protected against
grit and accidents. The various methods of mounting them
are the most efficient.

N.B.—Correspondents should state particulars as to
character of work in hand in writing us for information,
on receipt of which a special definite answer, with
reference to our full illustrated catalogue, will be sent.

PORTABLE BOILERS, AIR COMPRESSORS, BORING STEEL,
IRON, AND FLEXIBLE TUBING.

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GLASGOW.

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(Involving an entirely new principle in Mechanical Boring)

Requires only 20 lbs. steam or air-pressure.

Has only two moving parts—thus ensuring freedom from de-
rangement, and is absolutely self-feeding.

Is excessively light, and can be carried by one man, who can
with the No. 1 size (weighing only 35 lbs.) drill 40 holes
¾ in. diameter and 1½ in. deep per minute, in the hardest Aber-
deen granite for splitting purposes.

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of all kinds.

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AND

AIR COMPRESSORS.

DRIVING BED ROCK
TUNNELS, SINKING
SHAFTS, AND PERFORMING
OPEN FIELD OPERATIONS,

IS THE
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STRONGEST, & MOST EFFECTIVE
DRILL IN THE WORLD.

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PATENT SELF-ACTING MINERAL DRESSING MACHINE COMPANY

(LIMITED).

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MR. GEORGE GREEN, ENGINEER, ABERYSTWTH, SUPPLIES MACHINES under the above Company's Patents for
DRESSING all METALLIC ORES. Dressing-floors having these Machines pos-
sess the following advantages:—

- 1.—THEY ARE CHEAPER THAN ANY OTHER KIND IN FIRST OUTLAY.
- 2.—ONLY ABOUT ONE-FOURTH OF THE SPACE USUALLY OCCUPIED
BY DRESSING-FLOORS IS REQUIRED.
- 3.—FROM 60 TO 70 PER CENT. OF THE LABOUR IN DRESSING, AND
FROM 5 TO 10 PER CENT. OF ORE OTHERWISE LOST, IS SAVED.
- 4.—THEY ARE THE ONLY MACHINES THAT MAKE THE ORE CLEAN
FOR MARKET AT ONE OPERATION.

They have been supplied to some of the principal mines in the United Kingdom
and abroad—viz.,

The Greenside Mines, Patterdale, Cumberland; London Lead Company's Mines
Darlington, Colberry, Nanthead, and Ballyhope; the Stonecroft and Greyside
Mines, Hexham, Northumberland; Wanlockhead Mines, Abington, Scotland (the
Duke of Buccleuch's); Bewick Partners, Haydon Bridge; the Old Darven, Eggar-
mwyn, and Ystumtuen Mines, in Cardiganshire; Mr. Beaumont's W.B. Mines,
Darlington; also Mr. Sewell, for Argentiferous Copper Mines, Peru; the Brats-
berg Copper Mines, Norway, and Mines in Italy, Germany, United States of
America, and Australia, from all of whom certificates of the complete efficiency of
the system can be had.

WASTE HEAPS, consisting of refuse chats and skimpings of a
former washing, containing a mixture of lead, blende, and sulphur,
DRESSED TO A PROFIT.

Mr. BAINBRIDGE, C.E., of the London Company's Mines, Middleton-
in-Teesdale, by Darlington, writing on the 20th March, 1876, says—"The yearly
profit on our Nanthead waste heaps amounted last year to £600, besides the ma-
chinery being occupied for some months in dressing ore-stuff from the mines. Of
course, if it had been wholly engaged in dressing wastes our returns would have
been greater; but it is giving us every satisfaction, and bringing the waste heaps
into profitable use, which would otherwise remain dormant."

Mr. T. B. STEWART, Manager of the Duke of Buccleuch's Mines,
Wanlockhead, Abington, N.B., writing on 20th March, 1876, says—"I have much
pleasure in stating that a full and superior set of your Ore Dressing Machinery has
been at work at these mines for fully a month, and each day as the moving parts
become smoother, and those in charge understand the working of the machinery
better, it gives increasing satisfaction, the ore being dressed more quickly, cheaply,
and satisfactorily than by any other method."

Mr. BAINBRIDGE, speaking of machinery supplied Colberry Mines,
says—"Your machinery saves fully one-half on old wages, and vastly more on the
wages we have now to pay. Over and above the saving in cost is the saving in ore,
which is a great much short of 10 per cent."

GREENSIDE MINE COMPANY, Patterdale, near Penrith, say—"The
separation which they make is complete."

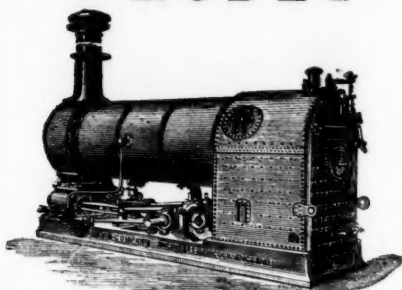
Mr. MONTAGUE BEALE says—"It will separate ore, however close
the mechanical mixture, in such a way as no other machines can do."

Mr. C. DODSWORTH says—"It is the very best for the purpose
and will do for any kind of metallic ores—the very thing so long needed for dress-
ing-floors."

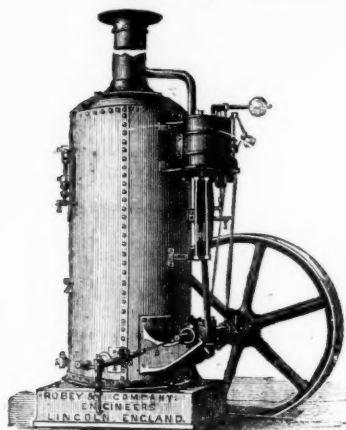
Drawings, specifications, and estimates will be forwarded on application to—
GEORGE GREEN, M.E., ABERYSTWTH SOUTH WALES.

ROBEY & CO., ENGINEERS, LINCOLN,

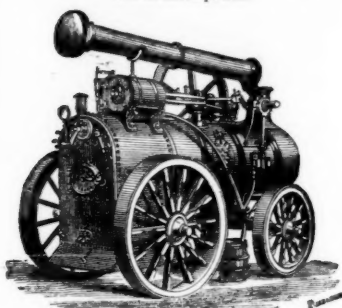
SOLE MANUFACTURERS OF THE



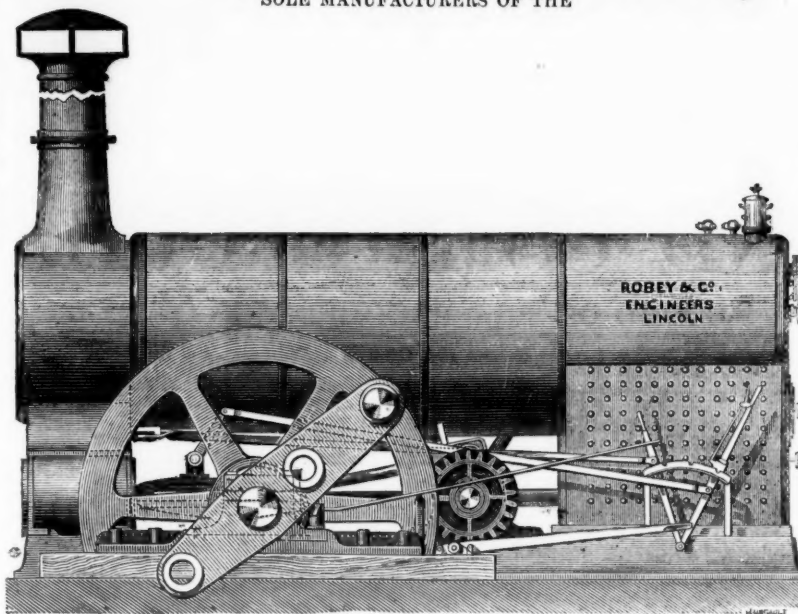
THE PATENT ROBEY FIXED ENGINE AND LOCOMOTIVE BOILER COMBINED, 4 to 50-horse power.



VERTICAL STATIONARY STEAM ENGINE AND PATENT BOILER COMBINED, 2 to 12 horse power.

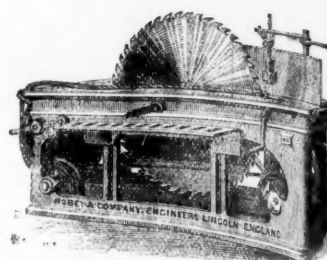


SUPERIOR PORTABLE ENGINES, 4 to 50-horse power.



No Expensive Brick Buildings or High Chimney required.

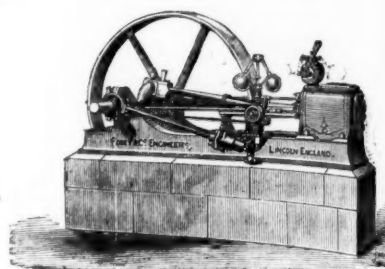
Boiler can be supplied with special Fire-box for Burning Wood, Sawdust, Turf, and every description of inferior Fuel.



SELF-ACTING CIRCULAR SAW BENCH.



PATENT VERTICAL BOILERS, 2 to 12 horse power.



IMPROVED HORIZONTAL FIXED STEAM ENGINE, 4 to 60-horse power.

PATENT IMPROVED ROBEY MINING ENGINE, OF ALL SIZES, FROM 4 TO 50-HORSE POWER.

Some of the advantages of this New Engine are as follows:—

SMALL FIRST COST. SAVING OF TIME AND EXPENSE IN ERECTING. EASE, SAFETY, AND ECONOMY IN WORKING. GREAT SAVING IN FUEL.

This New Engine is free from all the objections that can be urged against using the Semi-Portable Engine for permanent work, because it possesses the rigidity and durability of the Horizontal Engine, and at the same time retains the advantages of the Semi-Portable in saving time and expense in fixing.

THE PATENT ROBEY FIXED ENGINE

(Also above illustrated) is admirably adapted for driving Rolling Mills, Saw Mills, Brick Machinery, Pumping Machinery, and all descriptions of Fixed Machinery.

ENGINES UP TO 200 EFFECTIVE HORSE-POWER ALWAYS IN PROGRESS.

Prices and full particulars of all the Machinery here illustrated on application to the Sole Manufacturers,

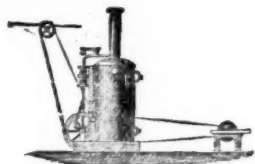
ROBEY & CO., ENGINEERS, LINCOLN, ENGLAND.

London Office: 117, Cannon Street, London, E.C.

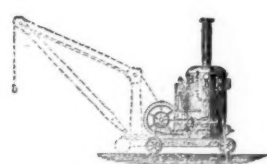
CHAPLIN'S' PATENT PORTABLE STEAM ENGINES AND BOILERS.

(PRIZE MEDAL, INTERNATIONAL EXHIBITION.)

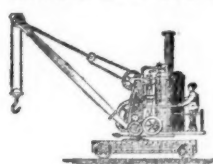
ALWAYS ON STOCK OR IN PROGRESS.



STATIONARY ENGINE. From 1 to 20-horse power. No building required.



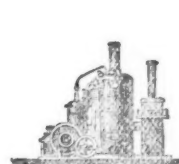
HOISTING ENGINE. 1 to 30-horse power. With or without Jib.



STEAM CRANE. 15 cwt. to 20 tons. For Wharf or Rail.



CONTRACTORS' LOCOMOTIVE. 9 to 27-horse power. For Steep Inclines and Quick Curves.



SHIP'S ENGINE AND DISTILLER. For Winding, Cooking, and Distilling. Sanctioned by H. M. Government.



WINDING AND PUMPING ENGINE. 6 to 20-horse power.

Parties are cautioned against using or purchasing imitations or infringements of these patent manufactures.

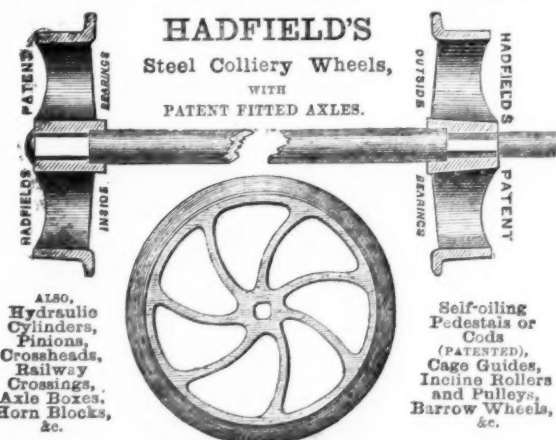
PATENTEES AND SOLE MANUFACTURERS,

ALEXANDER CHAPLIN AND CO.,

CRANSTON HILL ENGINE WORKS, GLASGOW.

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TO COLLIERY PROPRIETORS, MINING ENGINEERS, &c.



ALSO, Hydraulic Cylinders, Pinions, Crossheads, Railway Crossings, Axle Boxes, Horn Blocks, &c.

Self-oiling Pedestals or Cods (PATENTED), Cage Guides, Inclined Rollers and Pulleys, Barrow Wheels, &c.

Hadfield's Steel Foundry Company,
MANUFACTURERS OF EVERY DESCRIPTION OF
CRUCIBLE CAST STEEL CASTINGS.
ATTERCLIFFE, SHEFFIELD.

THE DIAMOND ROCK BORING COMPANY (LIMITED).

CONTRACTORS, ARTESIAN WELL BORERS, AND SINKERS.

GOLD MEDAL FOR ROCK BORING MACHINERY ... EXHIBITION, 1873.
SILVER MEDAL ... FALMOUTH, 1875.

This company now undertake the sinking of Artesian Wells. Their system rivals all others, both for efficiency and speed, and in addition produces "Solid Cores" from the Rocks bored through, thus giving invaluable evidence of the strata passed through as the work progresses.—Vide *Brewers' Journal*, October, 1876, and other papers.

OFFICES.—2, WESTMINSTER CHAMBERS, LONDON, S.W.

COAL-CUTTING MACHINERY.

W. and S. FIRTH undertake to CUT, economically, the hardest CANNEL, ANTHRACITE, SHALE, or ORDINARY COAL, ANY DEPTH, UP TO FIVE FEET.

Apply,—

16, YORK PLACE, LEEDS.

Original Correspondence.

ROCK DRILLS.

Sir,—If agreeable to any of your correspondents, I should be glad to know to what extent the rock-drill is used in Cornwall in driving levels or headings. Also, as there are more than a dozen rock-drills known to the mining public, and used in tunnelling, quarry work, &c., which particular one is found to be best adapted for mining purposes, driving stone drifts or levels in sandstone, hard shale, or granite, and the advantage it affords over hand labour. The wear and tear of these machines generally is very great. One machine is stated to have only 42 working parts about it; from this we may infer it has an advantage in their general introduction into mines. It is also to be considered, and the economy of their use in comparison with human labour. No doubt the expense of transporting power to the working places militates against them, as it does in the machines used for undercutting coal.

Would any reader also kindly give the length of the Mont Cenis tunnel completed. Also the length, when finished, of the St. Gothard tunnel in the Alps, and the length driven to the present time. Also the length (intended) of the Hoosac tunnel, in America, and the length driven to the present time, the rate of progression in 24 hours, and the machinery used in driving the tunnel. M. E.

Newcastle-on-Tyne, April 4.

WASTE OF SMALL COAL—PATENT FUEL—No. III.

Sir,—Fuel commends itself to shipowners and charterers of vessels to whom economy in space is most important. This advantage, it will be admitted, is great when it is borne in mind that 1 ton of compressed fuel—such, for instance, as is made by Mr. Hamel's process with Messrs. Clayton and Co.'s press—occupies only 30 cubic feet of space, whereas 1 ton of coal occupies from 42 to 50. A further advantage results from the fact that a cargo of fuel, being easily capable of close stowage, will not shift at sea whatever the state of the weather; and if made by such a process as Mr. Hamel's it will not absorb moisture or sustain damage from leakage of the ship.

The economy of well-made fuel deserves notice here. (Not mere economy as regards price, but as regards space, though this in a certain sense applies to price also in favour of fuel.) If fuel can be had of such a character that, as regards consumption, 2 tons will supply the place of 3 tons of coal it is equivalent to the saving of one-third of stowage room. That such may be the case I would refer to the sagacious Mr. W. R. Huntley, a highly intelligent and prosperous coal merchant of Greenwich, of some 40 years standing there. His acute sense and experience soon discovered the value of the Metropolitan Patent Fuel. Having tried it and satisfied himself he at once began to introduce it largely in the vicinity of London. For example, he went to the South Metropolitan Schools, at Sutton, 20 tons on trial, and the result cannot be better stated than by the report of the superintendent of Dec. 20 last, addressed to Mr. T. R. Huntley, brother of the former, and a member of the administering committee, and which it will be observed is countersigned by the engineer. The report is as follows:—

South Metropolitan School, Sutton, Surrey, Dec. 20, 1876.

DEAR SIR,—I have much pleasure in forwarding to you the result of certain experiments we have been making here in our furnaces with the patent fuel you have recommended for our adoption. We have had it in use for some weeks, and have a very careful test the following is the result of two weeks' work:—

First week—North Country steam coal	5 tons 16 cwt.
Second week—Metropolitan Patent Fuel	5 tons 5 cwt.

In addition to this saving in weight and cost of fuel the following additional advantages would still further reduce the outlay:—

- 1.—The ash is reduced to a minimum.
- 2.—The smoke, under a great nuisance, in spite of patent doors, &c., is very considerably lessened.
- 3.—As the patent fuel requires a little or no stoking there is a saving of quite 50 per cent. in the labour.

You are at liberty to make any use you please of this letter.

THOMAS HALE, Superintendent.
Countersigned by the engineer, W. BONE.

To Mr. J. R. Huntley, Greenwich.

The best practical result of this report is that it was followed by an order for 200 tons of the same fuel, and I hear that satisfaction is on the increase.

Not content with this Mr. Huntley determined to bring fuel of this character within easy reach of all in the vicinity of London who might be disposed to test its value, and avail themselves of its use. For this purpose, and to avoid the heavy expense of freight from the remote works of Briton Ferry, he gave to me the benefit of his long experience in business, and offered me convenient premises on his own property at Greenwich for the erection of machinery to manufacture fuel under Mr. Hamel's patent. I availed myself of the offer, and Messrs. Clayton and Co. have supplied the requisite press and machinery. This factory has been at work for some time, and the fuel has given great satisfaction to the consumers. Amongst the number may be mentioned the proprietors of the steam-tug Victor, whose engineer reports as follows:—

Steam tug Victor, on the Thames, Feb. 9, 1877.

GENTLEMEN,—In answer to your enquiry as to your fuel I beg to say that it has given us every satisfaction, and has secured to us the saving of 1 ton of combustible per week. We consumed 1 ton of hard steam coal per week before. Your fuel seems well, gives but very little ash and no clinker, is practically smokeless, and 5 tons are sufficient per week. We can easily go at 14 knots an hour with it, and this facility at going at full speed enabled us to earn 24 more last week than we should have done with ordinary steam coal. We shall continue the use of your fuel. Please get 5 tons on your landing stage by next tide.

F. VERRATT, Engineer.

Messrs. Vassard and Co.
Countersigned by BATES, WRATT, and Co.
Bowers, soap-boilers, chemical and other manufacturers on the north side of the Thames show their due appreciation of it by using this fuel, and a great advantage results to them from the exemption from prosecution for nuisance under the Smoke Consuming Act.

Now comes the very important question of the exemption from the liability to explosion and spontaneous combustion by the use of patent fuel and other incidental considerations. This branch of the subject cannot be more forcibly elucidated than by reference to the published report of the Royal Commission appointed to enquire into the causes of spontaneous combustion in ships laden with coal, and to the observations I made in your valuable paper, and which cannot lose by being repeated.

The report of the Royal Commission on spontaneous combustion on board ships is deeply interesting to the shipping and mercantile community—to shipowners and coalowners in particular. It is difficult to say which interest it touches most, although it affects them in different ways. The action of the Government, as one of the results of the enquiry, in taking measures to ascertain through the medium of the Customs authorities the sources whence all coal-carrying ships departing from these shores derive their supplies of fuel, whether as cargo or for ships' use, is of significant importance. All these are weighty considerations, and certainly tend to show the extreme importance of cultivating this branch of British industry. Much has been said about Mr. Hamel's process, and it may be a matter of some surprise that a gentleman holding the high position of solicitor to an important Government department should be the inventor of either process or machinery for the manufacture of fuel. It may be interesting just as a passing remark to observe that a relative of his, the Comtesse de Hamel, whose family was one of those who during the Reign of Terror in France was proscribed, whose property was confiscated, and whose representatives consequently were not rich, incurred some years ago considerable expense in encouraging an ingenious Frenchman to develop a system of fuel manufacture. Finding that she did him no service, and yet believing in the investigation of the subject with a view to attain success instead of failure, and recover the loss sustained. Finding the defective machinery was one cause of failure he set himself to work, with a natural talent for engineering, to invent a press, and succeeded to a great extent. There are two magnificent specimens of his invention now at work at Briton Ferry. He next proceeded to improve the process of manufacture by applying scientific remedies for the defects which exhibited themselves in the various known systems, and in many years of the Board of Trade enquiries into the causes of loss of ships he had the facility of knowing better perhaps than anyone

else to what the losses by explosion or spontaneous combustion were attributable, and it became an important study with him how to avert such calamities, and hence the importance of the observations already quoted on that very subject, and the value of Mr. Hamel's process, which provides a remedy for such disasters.

Terminating this subject, I may add that one of the best specimens of pitch-made fuel I ever saw in South Wales or anywhere else was made by the Cambrian Patent Fuel Company of Cardiff. Messrs. Burgess, Shaddick, and Co., one of the best exporting firms in the Principality, are largely interested in that manufacture, and I am glad to have the opportunity of your medium to tender them my thanks publicly for the readiness with which they explained to me the process followed by the Cambrian Fuel Company.

Old Vicarage House, Greenwich.

A. VASSARD.

THE FUTURE OF MINING IN CHILE.

SIR,—I have again visited the mining districts of the North of Chile. The riches of this country in silver, copper, silver-lead, and gold mines are a wonderful sight. I had been absent from Chile over 20 years, and imagined the country ought to have been pretty well worked out by that time; but I have been astonished to see the amount of newly-discovered mines. However, Chile has lived too fast, overburdened itself with imports, and the result is a complete stagnation in business. Money exceedingly scarce, and not to be procured even at high rates of interest (1 per cent. per month). The result is that mining suffers considerably under such a state of affairs. This is a good opportunity for acquiring mines at reasonable prices. This is also the right time for directing English capital to this country. Chile has advantages for safe and sound mining investments which no other South American Republic possesses. No revolutions—a quiet, hard-working, commonsense sort of people; in fact, they are called the English of South America. The financial credit of Chile in London stands high, and her citizens have a great pride (so exceptional with South American Republics) in keeping up their credit at any cost. The navy, as well as every other department, has been considerably cut down. Several Chilean war vessels have been dismantled. The salaries of each employee, from the President downwards, have been pruned down 25 per cent.; in fact, a perfect mania for economies, to the extent even of a Deputy to Congress proposing to do away with the chaplaincy of his Excellency the President, saying "his Excellency could go to any church like any other citizen." No considerations should be had for anything or anybody. The credit of the country was first, and above everything and everybody. There was a grand hurrah! for the Deputy—every precaution taken to meet her obligations.

I have recently received a letter from the Prime Minister, Don Jose Victorino Lastarria, with reference to carrying out all the necessary measures for the complete security of mining titles, and a thorough inducement for inviting English capitalists to invest their money in Chile. The letter is as follows:—

Ministry of the Interior, Santiago, Chile, Feb. 12.

DEAR SIR,—The contents of your letter, as well as the newspapers which you forwarded me, in which you published several matters of law relating to the perfect security of mining title deeds, in order to attract English capital to this country, are of great interest to me. I have read them with great attention, and you may rest assured that I will co-operate most decidedly with the great object you have in view—for I am convinced of the great results that are to be expected from carrying out these measures.

JOSE VICTORINO LASTARRIA.

Mr. Henry Sewell.

The latest news from the northern districts is the great bonanza of the silver mines of the Florida, north of Copiapo. The ores assay 1000 marks to the ton, or at the rate of 20000 sterling. These mines have produced in a short time about \$2,000,000.

The Cordes Mines, which were purchased last year on a report of Mr. J. P. Sewell, and 70,0000, paid for them, are turning out beyond all expectation. As he predicted in all his letters, that as they got deeper the ores would increase in silver. The percentage has trebled, from 60 ozs. per ton to 180 ozs., in less than eight months after purchase.

As regards Peru, I enclose some printed matter from the South Pacific Times, which please publish with this letter. As I shall be in Lima soon, on my way to London, I shall be able to give you personal details on arriving. HENRY SEWELL, M.E., F.R.G.S.

Valparaiso, Feb. 16.

PERU.—Both Government and Congress have been busier during the past fortnight than for a long time since the sessions were opened. President Prado has now definitely signed the Cerro de Pasco contract with Mr. Meiggs, and it is believed that within a very short period work will be recommenced on the Oroya Railroad, which has to be carried to the mines of Cerro de Pasco, where extensive silver-bearing strata are now unworked in consequence of all previous efforts to drain them having proved unsuccessful. The construction of a low level tunnel is one of the conditions of the contract, and those who know the locality state that the ores which will be drained by this work cannot be estimated at less than 500,000,000 of soles. Great satisfaction is felt at the decision of the Government in this matter, as it is believed the commencement of the railroads will rapidly restore the country to its former prosperity. The President has also placed his signature to an amended mining law from which many good results are anticipated. Congress has shown a little more activity, and has definitely passed a law providing for European immigration on a large scale, for which funds are to be provided by the sale of 6 per cent bonds to the value of 2,000,000 soles. Several other measures which are of internal importance have also been sanctioned, and there now only remain two which may be said to effect the whole community, and which require the decision of Congress before its prorogation.—South Pacific Times.

RICHMOND CONSOLIDATED MINING COMPANY.

SIR,—The present unsatisfactory position of this company is very remarkable—from one cause or another it is continually in a state of panic; no sooner is one difficulty disposed of than another crops up, as surely as the rising of the sun in the morning. At the last general meeting of the shareholders, in November, we were congratulated and charmed by the exhaustive statement of the Chairman as to the undoubted and increasing prosperity of the mine—so much so, indeed, that the actual quantity of ore in sight would take years to remove it; the payment of dividends had happily been resumed, and would be continued in regular quarterly payments. The shareholders naturally were delighted to learn such cheering accounts, and, in fact, were so far carried away with such a hopeful future and enhanced dividends that they determined to treat with scorn and contempt the foul and libellous attacks which had been launched against the company by the liberal circulation of contemptible pamphlets. Everything apparently went on prosperously for a short time only, when the shareholders were electrified by the information conveyed that the Eureka Company had obtained an injunction against the Richmond, on an *ex parte* statement, in respect to some patent or licence, which the latter company had obtained in the usual and customary manner. These proceedings were considered by the directors as simply trivial and vexatious, and would be got rid of in the course of a few days by the removal of the injunction; unfortunately the matter has assumed a more formidable appearance, and it is to be hoped that the question will be arranged next month, when the case will be heard to the satisfaction of the Richmond shareholders.

These proceedings, considered so trivial by the directors, has had the effect of reducing the value of the shares to the incredible and enormous amount of 190,0000.—the payment of dividends has ceased, and what next? This frightful depreciation in the value of the property is not trivial, but a very serious matter to every shareholder, and especially to those who have been weak enough to part with their shares. The idea strikes me very forcibly, and may possibly invite further consideration hereafter, as to whether it would not be advantageous to the shareholders in both these companies to allow of an "amalgamation." If they are so close to each other as to prevent their operations being carried on quietly and harmoniously far better that the two companies should amalgamate, and so put a stop to such ruinous litigation, which will entail a heavy expense to both companies, and thus deprive the shareholders of their dividends.

There is an increasing feeling that the present board of directors as now constituted are inadequate to the important duties required of them. A most valuable property is subjected without apparent cause to these repeated and ruinous panics, and the directors seemingly treat them with lightness and indifference, when at the same time the shareholders feel alarmed, and not without reason, when they see the fact of their property being depreciated by so trivial a matter as an injunction to the extent of nearly 200,0000. The next half-yearly meeting, in May, will afford the shareholders the right and the opportunity of ventilating these matters, and it will be their

own fault if they do not take the bull by the horns, and endeavour as far as possible to place the affairs of the company in a more satisfactory and stable position. A SHAREHOLDER.

Lloyd's, Royal Exchange, April 3.

CARDIGANSHIRE MINES, A.D. 1877—No. X.

SIR,—I promised in my last to enter into a few details as to the works that have been carried on in the East Darren and Van Mines. The lodes in both may be estimated at nearly the same size, about 40 feet; at least, this is the case where the best bunches of ore have been found. To account for the immense falling off of produce in the former, in my opinion, we have only to look at the fact that nearly 40 years ago the deepest part of the mine had been worked to a depth of 50 fms. under the adit; it is now 130 fms., or a sinking of 9 ft. on an average per year for the 40 years.

We will now take the VAN, where ample machinery was provided for sinking the mine 15 fms. yearly, or ten times the quantity of ground sunk through than was done at East Darren, and the lode proved to have maintained its size and productiveness, which has already given 300,0000. in profits, whilst the ore laid open in reserve is capable, according to the estimates of the manager, of giving 300,0000. more. The Van is the only mine in this district that has been sunk with such rapidity, and that followed the Cornish plan of opening out their works quickly. As the mines are in the same bearing strata, I would ask your readers to form their own conclusion as to what might have been achieved if the East Darren Mine had been pressed forward and carried on as the Van Mine has been done. Before entering on the merits of any other mine, which I hope to be able to do in my next, I wish to state that I think all parties engaged and connected with the working of mines in this vast district may take heart by the fact herein mentioned, which is that the one, and the only one, mine in this and the adjoining county has proved in a few words—all that can or could be desired.

Where people have such lodes as are found at E-gair-Hir to the north, and Froncoch to the south in this county, each being of greater width than either of the two of which comparison is made, I think I may with a great deal of propriety ask what there is to be feared for the future of mining in this extensive district if properly and energetically worked. ABSALOM FRANCIS.

Goginan, Aberystwith, April 4.

PARYS MOUNTAIN MINES.

SIR,—Having at various times made visits to these remarkable mines I may be able partially to reply to the enquiries of your correspondent in last week's Journal. The sulphate of lead he alludes to is probably the sulphide of lead which was found in some quantity and of good quality in one of the lodes of the Morfadu portion of the property. I cannot tell without reference to my notes why the working of this lode was discontinued, but I remember that it was at no great distance from the surface. The extract from the cyclopaedia given by your correspondent can scarcely represent the facts as they existed—that "the sulphate contained 50 to 60 ounces of silver per ton; which, however, it was found impossible profitably to smelt, owing to difficulties in separation of the various minerals." Had the ore been anywhere near as rich as mentioned means would have been found for its extraction. Difficult as it is to obtain without loss the whole of many metals contained in mixed ores, still it has for a long period been known how to eliminate one metal at the sacrifice of others. Instead of 50 or 60 ounces probably 5 or 6 is nearer the truth. When the working of the Morfadu division of the Parys Mountain Mines was temporarily abandoned not very long since there were two lodes that had been driven in the direction of the Great White Rock, from one of which good stones of sulphuret of copper were being taken of almost sufficient value to pay cost in times when a good price for copper should be ruling. These two lodes are nearly at right angles with the vein of "bluestone." When last in the underground working I chipped off a piece of this singular combination of metals, and as attention seems again to be awaking to the subject it may be interesting to some of your readers to see an exact analysis of the said "bluestone," and which I will endeavour to send in time for your next issue. CALAMINE.

PARYS MOUNTAIN MINES.

SIR,—I have read with pleasure the letter of "A Large Shareholder" on this property, and think his scheme for further developing the Morfadu part of it deserving of consideration. It would appear from this letter and your remarks on the mine that we are in the happy position of having a really good chance of meeting with something good in the Morfadu estate. As we are now getting well into the spring I think no time should be lost in opening out the mine. A special meeting of the shareholders should immediately be called to discuss the ways and means. With respect to the other branch of our property I must confess myself disappointed at the tedious delay in reaching the goal. Three months ago we were told it would be only a few weeks or even days. So far as I see from the reports we are not yet likely to reach the ore. We are in a very long lane indeed, and it is high time we had a turning. To suggest that we are following a "Will-o'-the-wisp" would be, I conclude, high treason. I trust the management will soon be able to give us conclusive proof that it is not so. April 4. ANOTHER SHAREHOLDER.

CAPT. TREGAY, AND PEDN-AN-DREA MINES.

SIR,—Your extraordinary correspondent "W. X." seems scarcely able to find a sufficient number of epithets to express his ideas in this case. He objects to almost everything. Objects to tell us who he is, and objects to being referred to as an anonymous writer; objects to having his questions unanswered, and objects to the answers given. Perhaps I ought to beg his pardon for having referred to him as an anonymous writer, for he has set his music too close to the minor key to allow any mistake being made as to the identification of the composer. Having put himself in a false position by his arrogance, he must be content with what replies I chose to give him. I may also tell him that it does not affect me much what he either believes or disbelieves, so that he can enjoy full scope for his assumed scepticism. I will say, however, that I did not give the answer to Question No. 3 which has been attributed to me, rather having to thank the Editor or compositor for having printed anything so conciliatory as that I would write "W. X." which I certainly did not say. It has, however, gained me the credit of having devised a cunning reply, and I suppose that we must be thankful for small favours. "W. X." thinks himself very clever at figures, no doubt, having given us extracts from the balance-sheet issued June, 1875, and from that issued March, 1876. But where is the sheet which gives the accounts between those two? The first named showed the accounts down to May 14, 1875, and the latter from January, 1876. I suppose he knows there must be some account somewhere between those two periods. Had he been able to have given you the sheet made up in February the truth of my remark would have been at once apparent. I presume also that "W. X." knows that during the period under discussion we had upwards of 40 men employed, using much timber and a steam-engine, putting down a new engine-shaft, all of which would be likely to cost some money. "W. X." presumes to give me a lesson on wisdom and discretion. I suppose he thinks it would be quite discreet on my part to answer every question which every Tom Noddy who is ashamed of his own name may think proper to get inserted in a public paper, notwithstanding its being accompanied with dark insinuations, cautions as to telling the truth, and as many other insults as he can get printed under an assumed signature.

As regards Pedn-an-drea Mines, I worked them with and for the late company's interest so long as they stuck to them, and have been able to work them without their help since. I did not advise them to sell, but quite the contrary, consequently have nothing to answer for to the late company, as has been already amply proved. It is, therefore, nothing less than sheer impudence on the part of "W. X." and his compeers to assume the right of questioning me on the matter. That I may have been a considerable gainer by the change is nothing to the point, because it has been clearly shown that I

purchased the mines when nobody else would. Having been a rather large shareholder, had I gone out when the others did, should have made a rather heavy loss, and I do not yet feel that because others will chuck up their chances I am to be expected to do the same.

W. TREGAY.

SOUTH CONDURROW MINING COMPANY.

SIR.—I find upon looking over last week's Journal that an "Old Shareholder" in the above mine speaks in the highest terms of it, and anticipates that it will at least be one of the best in the county. It must be gratifying to the shareholders who, like myself, have held on to it through "good and bad report" to find that at length it is likely to turn out so well. Even at the present price of tin a good dividend is anticipated at the next meeting.

Belfast, April 3.

SHAREHOLDER.

WEST TANKERVILLE.

SIR.—Owing to the failure of the Barry Port Company, I am afraid that a further call of preference capital will have to be made, to the detriment of ordinary shareholders, thus delaying the time which we had hoped was not far off of receiving dividends. The thought occurs to me that under such an exceptional and unlooked for occasion a special effort should be made to meet the case, and would suggest that a subscription of 1s. 6d. per share be made on both classes of shares, thus raising 1125*l.*, repayable out of any dividend the Barry Port Company in liquidation may declare making out with the first profits of the mine. By this failure shares have declined 10*s.* each, by my suggestion being carried out (considering that the mine is now more than paying its way, and that in the course of another six weeks time a deeper level will be opened out, thereby increasing the returns of ore), I think shares would again command their former price. I could enlarge upon the benefits to both classes of shareholders by such a course of action, but no doubt it will be obvious to all. I hope to see the matter taken up, and am ready any time with my proportion.

FROM A COUNTRY SHAREHOLDER.

DR. EMMENS'S MINES.

SIR.—I am a creditor of the learned Doctor, who set to work the mines which went under his name, but which have had several aliases, and the affairs of which I believe was to be wound up, and the creditors to be paid. A good while has passed away, and I have not heard that anyone has been paid. I have not received a penny, nor have I any knowledge of the present posture of affairs. Perhaps one of your readers can inform me as to the prospects of a dividend on, or settlement of, claims.—*Calstock, April 4.* A CREDITOR.

TRIAL BY JURY.

SIR.—One of the absurdities of long existence is the trial by jury—I mean the requirement of unanimity of judgment in the 12 men who compose it. Unanimity is not required or expected in any other deliberative assembly in the world. In all Parliaments measures are carried by majorities; in all meetings of companies and committees the decision is by the majority, to which the minority must bow. Why a jury should be an exception from the general rule I am at a loss to conceive, unless it goes upon the supposition that the evidence on the trial is so complete that all must be convinced alike, and, therefore, concur in opinion, and give a joint verdict. But we all know that there are few subjects on which any 12 men think alike, and it is a very rare circumstance to find a unanimous voice in any assembly. A motion may be said to be unanimous when it is unopposed by the non-voting portion of an assembly; but if all were to vote such a declaration could not be given, except in very few cases. Now, in a jury all must vote, and all vote one way. If otherwise there is a "locking-up" (sometimes for a night) to make men think alike, but men's minds are free, and although to get liberty an objecting juror may give up his judgment to the 11, there is no change in his opinion:—

"Convinces a man against his will,
He is of the same opinion still."

If the locking-up does not coerce the objector, the case is dismissed, and all costs of proceedings wasted. There was a case in point at the last sitting of the Vice-Warden, at Truro, in which Capt. R. Pryor was the plaintiff. The jury could not agree, and the case was therefore dismissed, to be tried, perhaps, *de novo*. Trial by jury is a fair mode of deciding a case, but the decision of the majority should be taken. If the jury is equally divided, the judge should give the casting vote. Such is my view.—*April 4.* R. S.

BEDFORD UNITED MINES.

SIR.—The reply of Mr. Laws, in last week's Journal, to my letter in the Journal of March 24, is, under the circumstances, fully as well as might be expected. I very much regret, however, to learn that I am in any way associated with a company some of the shareholders of which—and it may be those who pretend to be his best friends—should be so mean spirited as to have no more regard for the feelings of their Secretary than to impose upon him the arduous task of replying to a letter against his wish, for everyone knows if a person has not reason and sound argument on his side all he says only tends to make a bad case worse. I can assure Mr. Laws that the only object of my last letter was, as this is, for the benefit of my co-adventurers in a neighbourhood, if they would only take note of it, and I had not the least idea of abusing him or the committee. Mr. Laws says such letters will do no good; but will you allow me to say that the waste heaps and partially demolished account-houses, engine-houses, and stacks with which Devon and Cornwall are so plentifully supplied as to meet one's gaze whichever way he turns, are not crumbling monuments of rich mines in days gone by, of the poverty of the lodes underneath, but are existing and almost living evidences of injudicious, inconsistent, and extravagant management, and witnesses of the fact that the meetings were held in London or somewhere at a distance from the neighbourhood of the mines, all of which some philanthropist ought always to expose or bring before the minds of speculators. If meetings were held on the mines shareholders in the neighbourhood who are mostly acquainted with mining, and many thorough practical miners who have paid particular attention to the working of mines in which they are shareholders, would attend when they could, and would speak of any change which from their practical knowledge they might think an improvement, and of the results of their watchfulness as to whether anything had been carried on wrong or not; then if this were reported, as it should be, distant shareholders would have the chance of reading it in public print, and of judging for themselves the right side from the wrong. Mr. Laws will please make a note of this. I shall say no more about the local purser and resident agent, for, although their cup of joy must overflow at the idea of the chance of getting a certificate from someone unknown, to carry them no one knows where, and that their long services may not be entirely ignored, yet underneath there is the bitter taste of gall. The rule of having the future cost-sheets to bear the signature of the manager must have been spoken into existence from naught—a new creation commenced. I have no hand in the speculation of buying in South Ward engine, therefore shall have no hand in making a place for it at these or any other mines, consequently you will not require to hear anything more about it at present. For the satisfaction of myself, and shareholders generally, will Mr. Laws kindly reply shortly but pointedly to the following questions:—1. Who are the practical authorities that have expressed opinions on the Bridge and south lodes, and their further vigorous development?—2. Are they shareholders, and got to pay calls to carry it out, or do they receive a salary from the company?—3. As Mr. Laws has the reports since 1846 for 31 years, will he kindly state the size, composition, and underlie of the Bridge lode, where and when seen, and at what depth from surface?—4. Give same idea of the amount and value of the ore taken from the south lode?—5. Is it practical, judicious, and economical management to sink a level in an abundance of water, and then let it stand until the level below comes forth to drain it (this must be the case, for I see no report of it now), and to allow ends a level or two above to be driven in foul air when winzes could

be sunk dry and would have the double advantage of ventilating the ends and cutting out ore ground which could be taken away to an advantage, to pay the cost for which the shareholders have now to pay calls?—6. Would it not be more wise on the part of the management if they were to suspend operations for the time on Bridge and south lodes until they were in a position to carry it out from profits from the present ore-producing operations?—7. Will another one or more calls be required for the further development of these mines to place them in a paying state?

A VIGILANT SHAREHOLDER.

PLYNIMON LEAD MINING COMPANY.

SIR.—I wish to direct the attention of your readers to this mine as being one of the best I believe for investment. The mine is a shallow one, from which lead ores have been sold amounting to about 35,000*l.* The shaft is now down 11½ fathoms towards another or 36 fm. level, which it is expected will prove very rich. Intending purchasers should not fail to have it inspected by some independent agent for their guidance. Should the lode be cut rich (and judging from the sinking of Herbert's winze, which is only down 2 fms. 5 ft., and is worth full ½ ton per fathom) its value would be greatly enhanced. The company has about 3000*l.* in hand to prove the mine, and it is hoped bring it into the Dividend List. They have just sold 20 tons of lead ore for 270*l.*, which I understand nearly pays costs.

J. M.

NEW CONSOLS MINES.

SIR.—Permit me to suggest a mode by the adoption of which the works may be carried on, and all the creditors paid:—

- 1.—The shareholders who advanced money to meet the cost up to this day should receive no interest on those portions of the advances which were made to cover the calls on their own shares; and on the other portions no more than 4 per cent. per annum should be charged. The charge of 3*l.* per month is intolerable.
- 2.—The directors should have no salary, nor be allowed any travelling expenses, because they are altogether a useless body of men.
- 3.—The London office should be abolished, and the accounts kept exclusively on the mine under the supervision of the local committee.
- 4.—The engineer, so called, should be dismissed, which would effect a saving of about 250*l.* per annum, which is now not required.
- 5.—The local committee being men of business should be held responsible, jointly with Messrs. R. Pryor and Son, for the good management of the mine; and I will undertake to say that if Capt. Pryor's advice prevails with that committee, prosperity will yet result. The reckless conduct of the London directors deserves the severest reprobation from the body of shareholders, from every creditor of the company, and from every labourer on the mine.

I have been told that refined arsenic was sold by the temporary resident director at 6*l.* per ton. I am of opinion that a mass of iniquity will be brought to light by-and-by by—

JOHN BULL.

Plymouth, April 3.

NEW CONSOLS MINES.

SIR.—There are two letters in last week's Journal respecting this property which deserve to be read. The one is an attempt to bolster up the late manager, Capt. Pryor, at the expense of the directors, who have so long trusted in him and his judgment, and the other is a quiet and suggestive letter which seeks to impress on the new committee the responsibilities of their position, and the necessity for exercising an independent authority in reference to the new management of this admittedly valuable but hitherto badly managed property. Possibly the directors, or some of them, may reply to the letter written by Capt. Pryor's champion, or more probably they may not do so. But if Capt. Pryor is to "manage the mine in his own way" I for one (and I speak as a long-suffering shareholder) will make a present of my share certificates in the company to the nearest trunk maker. But these repeated efforts of Capt. Pryor to bolster up his tottering position will recoil on himself. I have been favoured by a mine broker with a list of the mines entirely managed by Capt. Pryor during the last 15 years or so, and I find that he has been the sole local manager, the sole local executive, the sole local everything in fact, of a dozen mines, nearly all of which has stopped working, and which have taken somewhere about 300,000*l.* out of the pockets of the shareholders from first to last. Comment is needless; but this I will say, that if Capt. Pryor is still to be the manager, to do as he likes with New Consols, I shall hold the directors and also the local committee responsible for their management. I do not find that in Cornwall Capt. Pryor is looked up to as a shining light, and I do find that in London he is regarded as almost the other thing. If others want to know about Capt. Pryor let them enquire as I have done, and I think they will feel somewhat astonished; but if the directors suffer the things to be continued that have been perpetrated for some time past they will deserve little sympathy from their co-shareholders. Mr. Pryor has boasted over and over again of making 1000*l.* a month profit, he has written reports that have proved valueless, and made speeches at meetings that have proved delusive, and should not have emanated from a practical miner. He may be honest, but I submit that under the circumstances his retirement is a necessity. When attacks are made upon gentlemen who have actually provided coin to the extent of some 50,000*l.* in a couple of years, by a servant who has always had his own way, and who has often signally failed, it is time that they should assert their true position. The success of New Consols is a matter that concerns the county of Cornwall, and I am glad to see that the local committee will take charge of it, and upon them will now rest all the appointments of managers and men, as well as the credit of success, or the odium of failure. I trust that the committee will be strong enough to carry out their own views, and that they will not be prejudiced in favour of either one mode of treatment of the stuff or of another. The question of concentration is the turning point of the whole concern. It is said the idea of stamping the stuff is bad, because crushing is cheaper and will make less slimes. I firmly believe the jiggers will take properly crushed ore, and reject 60 to 70 per cent. Messrs. Burnett, Green, and others say so, and it is done elsewhere. The stamps merely prove the value of concentration, but they will not prove which is the best method. Let 500 tons be put through the stamps and strips, and an equal quantity through the crusher and jiggers. Let quantities and results be carefully noted, and then something will be decided upon. The mine has machinery for treating 100 tons per day if the waste be rejected, and this means over 5000*l.* monthly, which should leave 2000*l.* profit. If this is accomplished the quantity can be gradually increased, and New Consols become the source of great profit to creditors and shareholders, and a credit to the county, but if only 20 tons a day are to be treated, and put into the furnace in the shape of mud, then further loss is inevitable. It is a pity Mr. Pryor's backer does not understand figures, but he may have a malevolent desire to distort the facts. It is not necessary to pay off the 40,000*l.* of debentures, and the products on the mine are amply to pay the wages. Many of us are wealthy men, and are ready to put more money into the concern, but it must first be made to show honest profits, as we are heartily sick of Mr. Pryor's prognostications and his delusive promises.

Mr. Warrington Smyth, I observe, attended the New Consols meeting, and spoke earnestly with regard to the mines, and those who know this gentleman will attach a far greater significance to his words than to the reports of the different people who have inspected the property from time to time. No question arises as to the mines themselves; the sole point is in regard to the treatment of the stuff. Mr. Smyth says selection is everything, and instances the St. John del Rey Mines as evidence of the value of selection, and he further states he has repeatedly urged it on Mr. Pryor, and therefore I ask—Why has not Mr. Pryor carried this into effect? Why, in fact, is selection studiously avoided, and stuff only fit for "mending roads" put through a process that costs 25*s.* per ton? And yet this is the manager who it is impudently suggested "should have his way." People may think as they like, and the committee may be deluded enough to follow the suggestion, but they will get no more money out of me and others if they do. On the other hand, if the concern is made to pay and money is wanted to put up jiggers there will be plenty of money forthcoming for that or any other useful purpose.

The shareholders have confidence in the directors, in the committee, and in the property, but they have no confidence in the extravagance and promises of people who will not and cannot see beyond their own noses.

NEW CONSOLS MINES.

SIR.—I question whether it ever happened that a mine fell into worse hands than those into which New Consols has, unhappily, fallen. Few mines have prospered under the control of ignorant and reckless men. It appears that one of the directors has spent a great deal of time on the mine, and has increased the cost from 1000*l.* to nearly 2000*l.* per month for labour only, and has contracted debts wherever he could till he could contract no more, making a total of liabilities 61,000*l.* I have been told that they exceed the amount. The directors also sent down a Mr. Burnett, said to be the company's engineer, but from all that I can learn his engineering has been nil, but he has a salary of about 250*l.* per annum, and an expense paid. A sad instance of extravagance. It has been said to me that for the advances made by what are called debenture holders (really the directors, who are also shareholders) a charge of 300*l.* per month for interest—nearly 10 per cent. on a charge of 40,000*l.*—and that the expenses of the directors and the London establishment are about 150*l.* per month more. The London establishment seem to me that it was the intention of those gentlemen to get the mine into liquidation that they might obtain it for others. A limited liability company, and all the capital (as I believe) taken up, the creditors would have little or nothing towards their claims, and I regret that a promising—a good—property should have been so unfairly dealt with. No mine, or very few, could stand such extravagance as has been carried on here. Whether the local committee will be able to recover from the evils entailed on the concern remains to be proved. I question the legality of the charge made for interest, because those who advanced the money are shareholders, whose duty it was to supply funds to the extent of their shares in carrying on the works. I do not think the Registrar of the Warden's Court would allow such a charge as nearly 10 per cent. on such advances. If the management of the works is left to a local committee Capt. Pryor's honesty will be shown in all respects, and profits certainly given.

"A Callingtonian," in last week's Journal, says it is not right for a mine manager to be a purser, intimating that Capt. R. Pryor was both. Captain Pryor never was a purser in any mine; he was handed to the labourers the cash sent down from the London office. As to a manager being resident, Captain Pryor's son, who is just manager, lives on the mine, and is a very intelligent, steady man, and rarely goes off the mine except on the company's affairs, and Capt. R. Pryor has spent most of his time there for many months. Mr. Burnett is an unnecessary appendage, and should have notice quit, and the directors should neither have salary nor travelling expenses, because they are worse than useless.

Calstock, April 2.

AN OBSERVANT MINER.

NEW CONSOLS MINES.

SIR.—Your "Callingtonian" correspondent evidently writes with some knowledge of affairs. It is no secret here that a radical change is necessary if New Consols is to be a success, and as Tavistock contributes two members of the committee who will take an active part in the work of superintendence I hope they will read your correspondent's letter and act upon it. Tavistock, Callington, Lockett, and Calstock have been greatly benefited by the 300*l.* per month spent in connection with New Consols, and they owe a deep debt of gratitude, for although the members of the committee are large creditors, yet they have only to work honestly and intelligently to make New Consols a success and get their money. I am glad to hear from a member of the committee that the appointment of agents will rest with them, and not with the directors. There are three times as many agents as there ought to be, and about twice as many men, and the result is a frightful expenditure. The manager must live on the mine and must stick to it alone, and then if each member of the committee in turn will make a point of attending daily on the mine some good will result. If New Consols is made a success the shareholders will no doubt soon raise the money to pay off the debentures. The time of year is in favour of the property, and happy co-operation will soon put matters right. The mistake hitherto appears to have been in treating rubbish, and if the staff have been selected then I consider the manager very greatly to blame. We look upon Devon Consols, of course, as our best type of mine, as the managers are men of very great experience, and above the fog-trot ideas of "bal" captains. I recommend the New Consols agents to have a look at the new jiggers at work there, but the Cornishmen are too obstinate to step across the Tamar to see our machines, however good they (the machines) may be. I have heard it said by many that New Consols can be made to produce 2000*l.* a month profit, and I do not doubt it, but to do this stuff must have the poor taken out of it. There is no difficulty about it, but if managers do not understand their work, and will not be taught, what is to be done? Look at what they do in Germany. Why do we not import German managers into our mines? I believe that Cornish miners and German managers would produce a good result, and I make the suggestion "gratuitously," as Capt. Pryor's champion facetiously observed last week. The day has gone by for hoping to improve the "breed" of bal experts. As long as they had rich mines they did well enough, but now that it has become necessary to cut and contrive they are not equal to it, and as very few mines can be called rich with the existing prices of metals we must look out for a new race of managers.

Tavistock, April 4.

A TAVISTOCKIAN.

NEW CONSOLS MINING COMPANY.

SIR.—Seeing two letters in last week's Journal on the above subject I have been induced to send you a few of my views concerning the same. "An Observant Miner" is certainly very hard on the London directors, as he would have it appear the present unsatisfactory state of affairs is due to their exertions alone. I do not think the Capt. Pryor would for a moment agree with this, for I believe he has received the greatest assistance from the directors, who have spent a considerable amount of their time on the mine with him, and they have also obtained the services of an engineer from Germany, and he has also been all his time on the mine. One would naturally say after this that what has been done was with the view to promote the welfare of the concern. One of the directors—Mr. Satterthwaite—has sacrificed a great deal of his time to that end, as he tells us in his report, and we also learn from the same source that he has mastered every difficulty in connection with the mines. The other letter, signed "A Callingtonian," reads to me more as if coming from a Londonian. He simply gives a little cheap advice to the committee, by telling them what he himself wishes to have done. I have a decided objection to anonymous correspondence of a personal character, but I sincerely hope that the real cause of the unfortunate collapse of this concern will be brought to light, and the subject thoroughly ventilated through the medium of your columns. Everyone who knows anything of the works is aware that an immense amount of new work and extensions have been lately carried on, and those who have lately inspected the mine still recommend a great deal more being done, but I would ask, was it not a great error of judgment, to say the least, on the part of the directors, for they are certainly responsible, to have all this done at a time when the company must really have been in an insolvent condition? Should they not, knowing as they must have done the circumstances of the company, have rather compelled every economy to be made, instead of authorising extensions which must have incurred a large amount of expenditure? I cannot but conclude that the financial condition of this company was never what it has been represented to be on the contrary. I have little doubt that when the details of this affair are unfolded it will be discovered that they have been the bankrupt estate for a long time past, although cleverly concealed. This is the only way I can account for the collapse at a time when there is such a quantity of valuable products on the mine, and a lot of new machinery almost complete and ready for work. There are other points in connection with this subject which I should like to

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GREAT LAXEY MINING COMPANY (LIMITED).

The half-yearly general meeting of shareholders will be held at the City Terminus Hotel, London, on Wednesday, when the following business will be presented:—

April 22.—The favourable results of the past six months' work and the continued prosperity of the mine generally, makes it a duty to submit to you our half-yearly report. We begin, as usual, with the workings of the Deep Mine. During the past half-year a considerable amount of work has been done on the engine-shaft, with the view of making levels in the 235 ft. level between the engine and the 220 ft. level, and of good ventilation, and cutting out and returning the Welch shaft, after making some preparations for the sinking of the shaft a lodge is being cut, and the whole is now being lowered to the 235 ft. level. In the same level, going south of engine-shaft, the 235 fathoms, the level is without material change; the end is, however, being a point where a lode of some promise is gone down in the 200. The level of ground between the two shafts has been regarded as dead ground, but that the bottom levels are holed we think it desirable to cross cut at one or two more likely points. The 235, nor of Welch shaft, is being raised, and is being holed to No. 1 winze. The 235, however, which remark will also apply to the end at present, where the level is not opened to its full width. When done, and the level is further from the disturbed ground caused by a small slide, we have little doubt the level will be found less fluctuating and increasingly valuable. No. 2 in the 220, has been sunk as deep as the 235, and the level driven about 200 yds on the lode in each direction. The whole of the lode was not carried in driving the winze, but is sufficiently opened below and in driving the ends of the level, which is on an average about 700, per fathom. The 235 and the level holed to the 210 ft. level, in value, has been passing through a lode varying in thickness from 2 ft. to 3 ft. 6 in. in value, from comparatively poor in places to 350, per fathom, and some in the roof is worth 250, per fathom, and No. 2 stopes 150, per fathom. During the past few months the work in the 210 ft. level north has been attended with greatly improved and gratifying results. The supposed branch standing to the west at the date of our last report has since been proved a very valuable reality, and has vastly changed the aspect of things in this level. A second cross cut, about 15 fathoms south of the first, was started a short time since, and intersected the winze in 7 fms. driving, and was 4 1/2 fms. worth of lode, and the 600 ft. level. The first cross cut was 5 fms. only, showing a tendency to diverge southward, and we cannot say how far it will continue distinct from the footwall lode. There is some indication of a split taking place about 25 fms. further south, and a little north of some stope ground in the roof, and here we intend making a third opening to the hanging. Whether this proves to be it or not, the discovery is of great value, but should it not prove identical with that at the cross-cuts, and thus

much of the ore to be found to be standing off still further south, as it so far offers to us, it is impossible to estimate its importance to the mine. Assuming, as we have every right, that the lode is as productive between the two cross-cuts as at these points, there is at this level over 20 fms. in length of ascertained ore ground, and, as we have gone on to a level over 60 fms. per fathom. The present end, going south, of the first cross-cut is within 100 fms. of the second, and, assuming that during this time will reach a mine which has been sunk as deep as this level roof from the 200, in a rich lode, averaging in value about 50¢. per fathom. This computation is just how much wanted for ventilation, the only means at present being an air machine worked by hand. Southward a stope in sole of this level is worth 20¢. per fathom. The forebrest of the 200 north must now be within a short distance of the slide in Dumbell's, and seems to be passing the point where the western part of the lode joins the other. There is, at any rate, a great width of ledge going back on the lying or footwall side, a little from the end, and, going westward, is altogether to the hanging or east of the present end, and therefore was unable to go further. The two extreme forelead, but at the point of junction the 200 is worth 50¢. per fathom. The two end stopes or reef are worth 40¢. and 60¢. per fathom, respectively. We must, therefore, have a very good middle

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The sole of thime level is worth 28¢ per fathom. There are two stoeps in the bed reported recently, an improvement respectively 45¢ and 35¢ per fathom. As driving north, the lode for a short distance has been met with in the 170 end level, but the end has again entered a bar of poor ground at the 155, 25¢ per fathom. The level, north of shaft, is worth 16¢ per fathom, and the other 25¢ per foot only similar to the roof, south of shaft, worth 35¢ per fathom. We can find no level has passed through the northern run of ore ground, while neither of the lower levels have yet reached it. From the character of the lode in the 140 fathom level, and its position with respect to the 110 fathom level and the 125 fathom level, the 140 fathom level has been taken to be expected. The winze 16' at the end resumed driving southward, the lode will rise from the 155 level, the winze 16' at the lode is worth 40¢ per fathom. We are stopping the sole from the roof the lode is worth 30¢ per fathom, and rising and stopping in the mining has passed through a moderately productive lode, worth on an average 25¢ per fathom. The end just now is not so good, but regular, and of a promising nature, as good as it has been, nor worth about 50¢ per fathom. The roof stoep is probably about 35 fathoms from the rise. In the 85 north driving, the end was divided and otherwise prepared for vigorously rising again, but at present the place is extremely quiet, probably owing to so much rainy weather, we have temporarily suspended it, expecting that very shortly the water will become less, though rich ore about 9 fathoms in height, worth in places 90¢ to 120¢ per fathom, the average being about 50¢ per fathom. Dumbell's shaft, sinking from the surface, communicates with the before mentioned rise, is down about 8 fathoms, but the walling not yet built in, the rock containing sound for a foundation; this work has been impeded, owing to our having to drive to the top for 10 fathoms, we have straightened, widened, and otherwise prepared the day level from days ago up to the Welch shaft for the locomotive engines, leaving nothing to be done except such as possible, and will not occupy much time. The locomotives will

used this far to the engine and Welch shafts while the remainder of the level to Dumbell's shaft is being prepared. The locomotives are now awaiting shipment per our own steamer at Swansea. The result of the trials upon various points of the level (Gloucester, Glendalough and Glendalough) have gone to show that the one about 51 ft. from the mouth approaches nearest the character of a regular vein. We have opened upon it about 4 fms. on its course, which does not exactly agree with the bearing of Luxley lode, though not far from it. We consider it is fully deserving a further trial, and into ground undisturbed by the slide upon which the adit cross-cut is driven. At the surface the material for strengthening the big wheel is nearly ready for putting up. A new turning lathe and screwing machine (the latter made on the mine) have been added to the new machinery. They do their work efficiently, and are a great saving of time and expense. Two additional sets of selecting liggers for the washing floors are also being prepared; one set will very shortly be in use. The shareholders of Great Laxley may still congratulate themselves upon the thoroughly sound condition of their property, and no effort shall be spared on our part to turn it to the best possible account.—F. REDDICIFFE, W. H. ROWE.

The half-yearly statement of accounts, ending Feb. 2, has been issued to the shareholders pending the forthcoming annual general meeting. The income for the half-year, including a balance of 9887*l.* 1*s.* 7*d.* from the previous account, amounted to 51,168*l.* 9*s.* 9*d.* The sales of ore had realised 41,195*l.* 5*s.*, of which lead produced 26,005*l.*, and blende 15,190*l.* 5*s.* The cost of labour for the six months had been 14,230*l.* 9*s.* 10*d.*; merchants' bills, 3757*l.* 12*s.* 8*d.*; royalty, 3795*l.* 12*s.* 1*d.*; freight and insurance, 1651*l.* 12*s.* 11*d.*; dividends and bonuses, 15,000*l.*; and amount to reserve fund, 2500*l.* The reserve fund now amounts to 5680*l.* The stock of ore on hand is valued at 19,371*l.* The balance carried forward, after paying all expenses, 9281*l.* 18*s.* 1*d.*

WHEAT, NEWTON.—The statutory meeting of this company was held at Holmshush House, near Callington, on Wednesday. Mr. D. Roberts in the chair. The secretary having read the notice convening the meeting the report of the directors was submitted, with a statement of accounts to March 31, from which it appeared that the costs of the mine for the quarter had amounted to 599*l.* 14*s.* 3*d.*, against proceeds of 819*l.* 7*s.* 2*d.* derived from the sales of silver, copper, and cupreous arsenical ores. Out of this the directors recommended the sum of 89*l.* to be carried to reserve, and a dividend to be declared at the rate of 10 per cent. per annum. The report also stated that the new silver discovery had been proved at points on the lode 100 fms. apart, and that upwards of 6 tons of silver ore had already been brought to surface, the proportion of which assayed over 500 ozs. to the ton. The following resolutions were then unanimously passed:—"That the report and accounts submitted to the meeting by the directors be received and adopted, and that a dividend at the rate of 10 per cent. per annum for the quarter ending March 31, 1877 be declared on the company's paid-up capital, and be made payable on and after the 20th instant.—That Mr. D. E. Solomon, of 19, St. Swithin's lane, London, E.C., public accountant, be elected auditor of the company for the current year." A vote of thanks to the Chairman and directors terminated the proceedings.

GREENHILL.—The statutory meeting of this company was held at Holmbush House, near Callington, on Wednesday, Mr. D. Roberts in the chair. The secretary having read the notices convening the meeting, the report of the directors was submitted, with a statement of accounts to the 31st ult., from which it appeared that the purchases of raw materials and the trading and manufacturing costs had amounted to £247, 10s. 6d., and £114, 18s., respectively, by product and material, consisting of arsenic, calcined ores, and fire goods. The balance of 400*l.* 5*s.* 11*d.*, thus appearing to the credit of profit and loss was recommended to be dealt with by placing 10*l.* to reserve and paying a dividend at the rate of 5 percent. per annum. The directors also stated that if the general aspect of commercial affairs were to improve they estimated that by continuing to do only the same amount of business as heretofore, the quarterly profits would be upwards of 2000*l.* The following resolutions were then unanimously passed:—“That the report and accounts submitted to the meeting by the directors be received and adopted, and that a dividend of 5 percent. be paid to the shareholders on the 1st inst. next; and that the directors be declared on the company’s paid up capital, and be made payable on and after the 20th inst.,” and “that Mr. D. E. Solomon, of 19, St. Swithin’s lane, London, E.C., public accountant, be elected auditor of the company for the current year.” A vote of thanks to the Chairman and directors terminated the proceedings.

HOLMBUSH—The statutory meeting of this company was held at Holmbush House, near Callington, on Wednesday, Mr. D. R. Berts in the chair. The secretary having read the notices convening the meeting, the report of the directors was submitted, with a statement of accounts to the 31st ult., from which it appeared that the trade profits of the mine for the months of January, February, and March had been £309, 16s. 7d., £438, 12s. 11d., and 1010d. 4s. 6d., respectively; that the premium realised by the sale of shares had amounted to 8192l. 0s. 6d., which had all been carried to reserve, together with contributions of 355l. for the trading account; that several valuable discoveries had recently been made, and that further discoveries were expected at an early date. The following resolutions were then unanimously passed:—"That the report and accounts submitted to the meeting by the directors be received and adopted, and that a third monthly dividend at the rate of 1 cent, per annum on the company's paid-up capital be declared, and be made payable on and after April 20." "That Mr. D. E. Solomon, 13, St. Swithin's-lane, E.C., public accountant, be elected auditor to the company for the current year." A vote of thanks to the Chairman and directors terminated the proceedings.

THE EMMA MINE.—A meeting was held in Glasgow, on Tuesday, of the principal shareholders in the Emma Mine. There was a large attendance. Full and satisfactory accounts were given of the position and prospects of the jury trial going on in the United States Courts against Messrs. Park and Baxter for fraud in connection with the sale of the mine. From the statement made, it appears that the directors are assured, both by their English and American counsel, that the prospects of success are very encouraging if the trial be vigorously prosecuted to a conclusion. The following resolutions were proposed, and unanimously carried :—(1) That the directors of the proceedings adopt hitherto by the directors in prosecuting Messrs. Park and Baxter in the United States Courts, and with the view of providing funds to carry on the trial to a conclusion, resolve to subscribe to the new issue of debentures of 10*l*. each (issued at 1*l*.), and recommend the other shareholders also to subscribe to these debentures for that purpose; and (2) that this resolution be forwarded to the shareholders with the request that they will communicate to the Chairman without delay the extent to which they will subscribe to the debentures.

THE VAN MINE—MONTHLY REPORT.

April 4.—The 105, east of shaft, is driving by the side of the lode; we put a blast into the hanging of the lode to-day to try it, which broke some very good orestuff; when we have driven a little further east we shall cross-cut into the lode to prove its value. The same level west of shaft shows a little lead and blende, but not sufficient to value at present end; we expect an improvement in this end shortly, as we are approaching the ore ground seen going down on the bottom of the 90 west. The lode in the 90, west of shaft, is worth 34 $\frac{1}{2}$ per cubic fathom for lead ore. The stripping of the lode to full width in the side of this level at the respective points 40, 35, and 8 fms west of shaft, are worth on the average 31 $\frac{1}{2}$ per cubic fathom for lead ore; the side of the present level east of shaft is worth for lead and blende 13 $\frac{1}{2}$ per cubic fathom. The 75, west of shaft, is still pushed forward by the side of the lode; we shall again cross north to prove the value and width of lode in the course of this month. The stopes in the back of this level, nine in number, are worth on the average for lead ore 30 $\frac{1}{2}$ lbs. per cubic fathom; average width 18 ft. 6 in. The 75, east of shaft, is now driving by the side of the lode; after a few fathoms more driving we shall cross north to prove the width and value of the lode. The 60, east of shaft, is driving by the side of the lode, at a point about 10 fms. east of shaft, is worth 29 $\frac{1}{2}$ per cubic fathom; mean width of lode 29 feet. The 60 east is continued by the side of the lode. The stopes in the back of the 60, east and west of shaft, 12 in number, are worth on the average 22 $\frac{1}{2}$ lbs. per cubic fathom for lead ore; average width 17 feet. The stopes in the back of the 45, east and west of shaft, are worth 23 $\frac{1}{2}$ per cubic fathom; mean width 16 feet. All the other underground work not mentioned here is pushed forward with all dispatch. The engine house. We have commenced the building of the engine house upon a new level floor. All the machinery is in good working order. Our monthly sale takes place to morrow upon 650 tons of lead ore and 150 tons of blende.—WM. WILLIAMS.

THE COMB MARTIN MINE.—The 28 fm. level has been reached, and at this point the lode is found to be better than was anticipated. The former parties drove 20 fms. eastward in this level, 13 fms. of the distance being on the course of the lode, and 7 fms. by the side of the lode, which is left standing for this length. The lode has not yet been cut through, but as far as seen it will produce several hundred-weights of rich silver lead per fathom. The former parties sunk a winze and drove a level 25 fms. below the 28 and at this point, which is some fathoms behind the 28 end, the lode is worth 10 cwt. of silver lead per fathom. The prospects are most encouraging, and as the mine can be worked below the depth already arrived at without the aid of machinery the adventurers possess a property that is likely to yield good returns at a very light cost.

CWM DWYFOR MINE (Carnarvonshire).—This mine is situated at the head of the Pennant Vale, and adjoins the Drws-y-coed Mine on the ridge of Mynydd Talmignedd. It was started about six years ago by a London company, and the indications on surface led the directors and others to expect early returns of lead and copper. In view of this, a narrow gauge railway has been brought up to the mine from Portmadoc for the purpose of shipping the ores as well as of bringing materials to the mine. The mine has been very well laid out, both with regard to economy and durability, under the direction of Mr. Joseph Newell, C.M.E., and parcels of ore have been sent to market, the returns, however, were not sufficient to carry out certain exploratory work which was necessary for the permanent working of the mine, and the original capital being spent, there seemed no alternative but the winding up of the company and the forming a new one. This has been done since the commencement of the present year, and the original shareholder have since faith in the future of the mine that the greater part of the shares is the new company have been taken up by them. During this time operations at the mine have been suspended, but vigorous working will be commenced again.

MINES OF WEALTH.

THE ESGAIR-HIR SILVER LEAD AND ESGAIR-FFRAITH COPPER
MINES (CARDIGANSHIRE).

There can be little doubt that these mines were amongst the first worked in this country, and that they were worked by the ancient Britons at a very remote period we seem to have ample proof, not only in the old relics found in the most ancient mines, but we may also form a pretty correct surmise as to the purposes the metal extracted was applied. The annals of the original discovery, and the development of the work upon the metallic veins of Cardiganshire, are lost in obscurity. There can be no question (or, least, there is none on my mind) that the oldest excavations and workings were made on copper lodes, or, more properly speaking, where the ore of this metal may be said to have cropped out at surface; and it is somewhat remarkable that in this country this has been the case in three of the richest mines ever yet discovered in it, and have yielded metallic ores to the value of from six to seven million pounds sterling. The three mines alluded to are the Copper Hill, at Old Cwmystwith, the eastern portion of the Great Darren, and Esgrif Ffrith Mines, the latter being the eastern portion of the very extensive grant of which I am now treating. By far the richest copper ore has been found in this sett, and moving on from the time of the ancient to the modern Britons, it may not be amiss to state here that the last parcel of this ore sold realised 25*l.* 10*s.* per ton, or equally as rich in produce as the Cape ore. The tools found in these mines, of which a large quantity have been seen, have been in some instances strikingly similar to the tools of the modern Britons, as the stones are stones brought from the sea beach, and varying in length from 6 in. to 9 in., and in breadth from 2 in. to 3 in., marked round the centre, evidently caused by ligature, for holding them tightly with a willow, or some other bandage.

There can be little doubt, on examining the oldest of the levels driven and the workings generally in this county, the former being extremely small and seems to us surprising how they could have worked them all, that these hammer were used for the purpose of beating copper wedges or chis-els (no doubt obtained and extracted from the ore of that metal); but it is equally evident, and I may say impossible, that any very large quantities of metallic ores could have been detached from the small districts at the time of treating of the fact, and the richest portion of the loaves seen at surface, and it seems that the wants of these early members of the human family were easily supplied, and were confined to arrowheads and for weapons of offence and defence. There can be little doubt, therefore, that this sort of mining are the vestiges of a very remote period, as before stated, as when we enter upon authentic history at the invasion of the Romans, from the introduction of chariots into the British army, it must be argued, as it required no mean exertions to bring the chariots and the soldiers to the aid of the Romans, and mining had considerably advanced in these islands, and that much of the primitive barbarism of ancient Britain had been shaken off. Long before the time of the Romans invading this country the mines of these islands must have been extensively worked. Of this we have the evidence of Cicero, of the disappointment of the Romans at not finding silver mines to answer their expectations in that respect, for it is more than probable, acquainted as the Romans were with mining, and finding silver and lead veins coming down to the very margin of the sea on the coast of Carthage, that they were sufficient geologists to pronounce at once that the chalky hills or cliffs of Dover were not likely to encase veins of the precious metals.

That the fame of the silver mines of Britain had spread far and wide amongst the Romans there can be no doubt, for Cicero, almost immediately after his disembarkment of Caesar's troops, writes to his friends thus:—"Of one thing we are already certain, that there is not a grain weight of silver on that island, nor the least prospect of plunder, but from the slaves that may be brought away." The same opinion is expressed by Pliny, who, however, adds that the Romans were to account for this hasty determination on the ground that the gallant defence made by the brave islanders put the Romans something out of humour with the country generally, and that they had no great appetite to hunt up silver mines after such an unwelcome reception. From the time of the Romans, and for many centuries after, the principal mines in this part of Britain, and foremost amongst them the Cornish and Welsh, have been almost entirely unworked, and have been so seldom, if ever, left entirely unworked, for as very little of the land for many centuries after the Roman invasion was brought under cultivation, especially on the mountain hill tops, the population would naturally have an immense quantity of spare time at their command, and this, there can be no doubt whatever, was in a great measure devoted to the prosecution and working of the richest of the veins, and to the extraction and sale of the precious metals. It is true, however, that the occupation of the land, from the nature of the veins—making rich ore at and near the surface throughout this country, and in no instance could this have been the case more than at Esgar-hir, for in places the lode has been worked away for a width of from 60 to 90 ft. to the grass-roads, and as the ore made in solid bunches or ribs of from 6 ft. down to 3 in.—I believe I am safe in saying that this property has yielded a great quantity of ore, and of any one of the three principal metals, from what I call a goodly harvest, hereafter. I think I have been very dissatisfied of my taking this view of the case.

Undoubtedly as the work on fresh discoveries were made and new veins opened out, and mining became better known and appreciated, and Cardiganshire became a great mining county, producing annually very large quantities both of lead and silver: for I have treated of 114 mines have been worked to some extent in it, and there may be some that have not yet come under my notice, and though I think there cannot be many, as 37 years has given me a fair trial of time and space, I have not been able to do much more than to give a general outline of the planning and marking the lines of the greatest lodes traversing this county. It would be both unnecessary and impossible for me to give the exact details of the working of these mines from century to century, but that they were extensively worked in the time of Charles I. there can be no reason to doubt, for we read, and have it as a fact, that the now Gogerddan Estate, which would include these mines, was at that time a little known route, for the principal of them were worked by a Mr. Bushel to amass a princely fortune by them. The importance of the mines of this county were at this time sufficient to obtain a charter to coin at Aberystwith, and a Mint was established there. Several specimens of these coins are still to be seen at the University of Wales in that town. It would appear to me from Mr. Bushel's time there would seem to be a lull in the prosecution of most of the Cardiganshire mines—at least it seems not to be prosecuted to any extent until the time of the late Earl of Pembroke, and the time of Waller, in the 17th century. At this time Eggarhbir and Eggarfraith were by far the richest mines worked in the Principality; their immense wealth attracted the notice of the Crown, and the ore, being exceedingly rich for silver, was claimed as belonging by right to the King. This action failed, and it is said Sir Carbery Price, ancestor of the Gogerddan House, and who held a moiety of the mines, was still being the owner of the land, but the right was given to the mines in less than 24 hours, rather an uncommon feat to have been performed in those days.

born in those days, and of these mines that they were capable of turning the enormous sum of 70,500⁰⁰ per year profit, and Sir Carbery Price was offered a very large sum of money for his shares in the mine. The statements made by Waller have been doubted by many persons, but that his estimates are made with accuracy and judgment there can be no doubt, and the more we see of the mines in this district the more probable Mr. Waller's statements and reports become, and if we reflect on this subject and take another property that has been opened out in the same district, and which is situated to the east of the first, we can but think we shall have abundant proof that Waller's statements were perfectly correct. To prove this we will compare the Esgair-hir lode with the Van lode. The size of the Van varies from 40 to 60 ft. wide, and that of Esgair-hir is rather wider than the Van. The length of the ore found at Esgair-hir is immense, independent of the rich copper deposit at Esgair-frith, whilst from the richness of the bunches of ore taken away from Esgair-hir since I have resided in the county, and taking into consideration the smallness of the Van, it is evident that the Esgair-hir is a comparison to Esgair-hir. The ore in the lode is almost invariably found nearly solid. From the time of Waller I shall now resume my remarks by coming down to the time of its being worked, when my late brother Mathew Francis, and shortly after when I came into this county. These mines were then in the hands of a Flintshire company, who worked them for many years, greatly improved the road leading to the mines, erected new machinery, and brought and kept the returns of the mines from one bunch of ore ground up from 70 to 100 tons. The mine had been changed hands three or four times, each party having discovered rich course, of ore in different parts of the mines, and making returns from 60 to 100 tons per month for very short bunches of ore.

I must now go to sleep into what I would recommend doing. I put the mine into a state of proper working, and permanent profits such as was achieved by Waller (70,500*l.* per annum), and I may first remark that there is an excellent lot of machinery of all kinds on the mines to carry out what I shall recommend to be done, comprising an excellent and powerful steam-engine, two crushers, drawing-machine, and dressing apparatus at Esgair-irh, and several water wheels, crushing, drawing, and dressing apparatus, the latter on the most improved principle, and an abundant supply of water at Esgair-frith for working the same. It is not necessary for me to go into details of the machinery on the mines, or to state the value of the buildings, which are all together worth about 100,000*l.* The value of the buildings on these mines, barracks for miners, office, &c., under a sum of 12,000*l.*, but they are invaluable, as, if they had to be erected, it would cost you a loss of many years in the profitable working and the development of these mines. In addition to this, it is right to state that there is completed also what would take two years to carry on. This work can be made at once available for working the courses of ore under the present bottom, 30 fathoms. The Blue shaft having been sunk to a depth of 15 fathoms under the deepest workings at Esgair-irh, and in the centre of the great course of ore worked by Waller, and before reaching the main level you will intersect the Blue shaft, which will give you a series of rich and ore raised over the adit on tribute, and which has never been seen under, so that from these sources alone large returns can be immediately made, and lay open a very large quantity of profitable stopping ground.

mate, richly lay open the very large quantity of profit to be made, and run 30 fathoms below the ore workings, and here you will also be able speedily to lay open vast quantities of rich ore ground by opening from this point also. At Esqair-frairies, where, I may say without fear of contradiction, there is the finest and richest gossan ever laid open in this country, and from the very rich copper ore I have just mentioned, I would advise the sinking of the engine-shaft from the level of the 10 to the 20 fm. level, and to press on these levels under the rich ore ground passed over in the adit and 10 fm. levels. You will be sinking your engine-shaft on the course of the lode, and will be getting rich copper ore from it at ones. The adit level east should also be kept constantly going. As soon as the 20 fm. level has been reached it will lay open very profitable ground, and, in a few days, in a position to make a trial of the best level for the copper workings. I cannot speak too highly of this portion of the property, being fully convinced it will prove enormously rich.

at 42 fl. at Rotterdam. Upon the German markets tin has been rather a better tone. The Paris lead market has been quiet. The French lead is worth 21 $\frac{1}{2}$ l. and lead from other sources 20 $\frac{1}{2}$ l. per ton. The German lead markets have been rather feeble. The zinc has made 21 $\frac{1}{2}$ l. 16s. per ton at Paris with delivery at sea. Rolled Vieille Montagne zinc has brought 30 $\frac{1}{2}$ l. 16s. per ton at sea. The market for galvanized iron has been quiet. The iron nails, scilicet. There has not been much doing in zinc upon the London markets; nevertheless, prices have been tolerably well

THE SCOTCH MINING SHARE MARKET—WEEKLY
AND LIST OF PRICES.

During the past week, owing to the Easter holiday time, evening, business has been literally at a stop. In shares of coal concerns, Marbella are wanted, at an advance of 2s. per share, while Ebbw Vale are 5s. lower. Benhar have improved 2s. per old shares, while 1s. 9d. less has been accepted for the new. Connell are at 197. 11s. 3d.; Mersey, 25s. dis.; Scottish Locomotive, 37s. 6d.; buyers; Sheepbridge (new), 104; Skerne, 64; 12½; West Cumberland, 9; Workington, 15. In shares of copper concerns, Cape have improved 10s., and Tharsus 10s. while Huntington are 1s. 6d. lower. Yorke Peninsula (new) are 5s. to 10s. In shares of home mines, Glasgow Carbons (new shares, show no alteration. South Downward are 7½ to 7½. Bampfylde are at 10s.; Cargill, 85s.; Great 20½ to 21; Leadhills, 6½; Parys Mountain, 8s. to 10s.; Vaux 42s. 6d.; Wheel Grenville, 22s. 6d. to 27s. 6d.

The position of Bea tin in Holland on March 31, according to the official returns of the Dutch Trading Company, was—		1877.	1876.	1875.
Import in March	Slabs	3,111	2,102	—
Total three months		35,191	11,024	9,819
Deliveries in March		10,040	5,916	12,775
Total three months		30,371	20,157	27,589
Stock second-hand		47,918	27,130	10,487
Unsold stock		12,675	58,000	106,000
Total stock		60,593	82,760	117,277
Afloat	Peculs	8,425	8,100	1,500

Statement of Billiton:—				
Import in March	Slabs	3,100	2,800	6,099
Total three months		21,547	22,679	16,349
Deliveries in March		5,927	8,653	8,323
Total three months		22,852	23,410	18,000
Stock		29,514	28,948	29,955
Adfloat	Peculs	13,000	14,000	8,000
Quotation Banca		42½ fl.	49½ fl.	52½ fl.

March 31 \$ Billion 41½ 40 51

These combined returns of Banca and Billiton for 1877, compared with those for 1876, exhibit—A decrease of the import for March of 15 tons; an increase of the import for the three months of 752 tons; an increase of the deliveries for March of 44 tons; an increase of the deliveries for the three months of 299 tons; an increase of the stock second hand of 634 tons; a decrease of the unsold stock of 13,777 tons; a decrease of the total stock of 703 tons; a decline of the quotation of Banca of 1/16, 3/8, per ton. The Government returns for the months of December and

EXPORT OF TIN FROM HOLLAND.

	December.			January.		
	1876.	1875.	1874.	1877.	1876.	1875.
GermanyTons	272	355	298	237	171	217
England	2	17	22	19	7	13
				109	70	85

Belgium.....	166	114	109	192	19	86
France.....	56	22	45	53	10	24
Hamburg.....	53	36	60	25	23	12
United States.....	—	9	44	27	2	—
Other countries ..	16	—	10	4	3	4

Total 565 553 588 557 295 355
Rotterdam, March 31. EBELING AND HAVELAAR.

The following are our usual statistics—

	1877.	1877.	1876.	1875.
Forside in London	Mar. 1.	April 1.	April 1.	April 1.
Tons	6,432	8,989	6,745	6,974.

Banca in Holland	1,048 ...	1,469 ...	853 ...	1,040
Billions in Holland	1,010 ...	922 ...	905 ...	935

Afloat for Europe, Straits, advised by mail and wire	780 ...	500 ...	875 ...	1,210
Afloat, Australian ditto	2,400 ...	2,100 ...	2,000 ...	1,950
Afloat, Billiton	1,000 ...	812 ...	875 ...	350
Banca in Trading Company's hands	945 ...	394 ...	1,733 ...	2,600
Banca afloat, by sailing vessels	111 ...	526 ...	5-0 ...	90
Total	15,718	15,715	14,463	19,054

Total 19,119 ... 19,119 ... 19,119 ... 19,119
 April 5. FRENCH AND SMITH.

FOREIGN MINING AND METALLURGY.

There is little fresh to report with respect to the French coal trade: the situation remains practically unaltered. It is difficult, indeed, to say what is likely to bring back the activity which has disappeared from the trade. It will not do to reckon any further

disappeared from the trade. It will not do to reckon any further upon the sugar-producing season, and the winter is at an end, al-

though an occasional frost or two may occur during April. The trade may be said to enter upon the summer season with abundant and complete supplies and stocks which have lost all their elasticity, so that no serious change can be anticipated in prices before October—that is, before the opening of next winter. The French Legislature has appointed a commission to report upon the best

means of preventing explosions of fire-damp. The Bonne Esperance Collieries Company has been paying a dividend of 1/- 2s. 6d. per

means of preventing explosions of fire-damp. The Bonne Espérance Collieries Company has been paying a dividend of 1*l.* 2*s.* 6*d.* per share for 1876.

Serious attention is being given in Belgium to the question of a canal from Mons to Charleroi, and to the enlargement of the canal from Charleroi to Brussels. The Minister of Public Works has received a numerous deputation upon the subject, and he promised to give the question careful consideration. It is to be hoped that the

FOREIGN MINING AND METALLURGY.

The result will be that satisfaction will be given to all concerned. The Belgian coal trade remains in much the same condition, and all that coalowners can do is to wait. The trade does not present the least interest, either as regards animation or prices, and it is of little use to dwell upon small isolated facts.

The revival in the French iron trade, which is usually noticed in the spring, has presented comparatively little importance this year. Prices do not improve, and the future does not hold out any prospect of additional strength. Nevertheless, working operations are being carried on tolerably well, the rolling-mills do not want work, and small orders are being received from day to day. Pig remains feeble; Luxembourg pig, for instance, does not make more than 35s. 6d. per ton. Both the imports and exports of iron into and from France declined in the first two months of this year, as compared with the corresponding period of 1876. It appears from a statement issued by the Committee of French Foremasters that

The Scotch Stock Exchanges:—		Dividends.		Rate per cent.		Description of shares.	
Per share.	Paid up.	Previous.	Last.	per annum.			
£10	47	—	£ 8½	5	Arnstorn Coal (Limited)	COAL, IRON, STEEL.	
10	10	9	6	—	Benhar Coal (Limited)		
10	8	9	6	—	Ditto		
100	45	35s. 11d.	18s. 9d.	—	Bolckow, Vaughan and Co. (Limited)		
10	10	10	10	—	Calcraftable Gas Coal (Limited)		
10	10	10	nil	4	Challington Iron (Limited)		
39	29	nil	nil	—	Ebbw Vale Steel, Iron, and Coal (Limited)		
10	5	nil	nil	—	Fife Coal (Limited)		
10	10	—	—	—	Glasgow Port Washington Iron & Coal (Limited)		
10	10	—	—	—	Ditto Prepaid		
10	10	—	—	—	Lochore and Capletrae (Limited)		
10	10	—	nil	—	Marble Iron Ore (Limited)		
10	10	nil	—	—	Monkland Iron and Coal (Limited)		
10	10	5	4	Ditto	Guaranteed		
100	100	nil	nil	—	Nant-y-Glo & Blaen Ironworks & Coal (Limited)		
6	5½	nil	nil	—	Ormos and Cleland Iron and Coal (Limited)		
1	1	12½	17½	—	Scotch Australian Mining (Limited)		
1	8s.	12½	17½	—	Ditto New		
Stock	100	5	nil	—	Shotts Iron (Limited)		
COPPER, SULPHUR, TIN.							
4	4	—	—	—	Canadian Copper Pyrites (Limited)		
10	7	20s 11d.	20s 11d.	—	Cape Copper (Limited)		
1	1	15	15	—	Glasgow Caradon Copper Mining (Limited)		
1	15s.	11	—	—	Ditto New		
10	9½	nil	nil.	—	Huntington Copper and Sulphur (Limited)		
2½s.	23s.	—	—	—	Kawadu Mining (Limited)		
4	4	—	—	—	Panulicilo Copper (Limited)		
10	10	6½	6½	—	Rio Tinto (Limited)		
20	20	—	7	—	Ditto, 7 per cent. Mortgage Bonds		
100	100	—	5	—	Do. 5 p.c. Mort. Deb. (Sp. Com. Bk.)		
10	10	nil	nil	—	Russian Copper (Limited)		
10	10	25	22½	—	Tharsis Copper and Sulphur (Limited)		
1	7	25	22½	—	Ditto New		
10	1	—	—	—	Yorke Peninsula Mining (Limited)		
1	1	—	—	—	Ditto, 15 per cent. Guaranteed Preference		
GOLD, SILVER.							
1	1	—	5	—	Australian Mines Investment (Limited)		
20	20	—	—	—	Emma Silver Mining (Limited)		
10	10	—	—	—	Flagstaff Silver Mining (Limited)		
6	6	—	—	—	Flax Chance Silver Mining (Limited)		
5	6	7s. 6d.	7s. 6d.	—	Richmond Mining (Limited)		
OIL.							
10	7	5	6	—	Dalmeny Oil (Limited)		
1	1	—	7½	—	Oakbank Oil (Limited)		
1	5s.	—	7½	—	Ditto		
10	10	—	2½	—	Uphall Mineral Oil (Limited) "A"		
1	10	—	—	—	Ditto "B" Deferred		
10	8½	5	9	—	Young's Paraffin Light & Mineral Oil (Limited)		
MISCELLANEOUS.							
50	25	10	5	—	London and Glasgow Engineering & Shipbuilding (Limited)		
20	14½	—	—	—	Peruvian Nitrate (Limited)		
10	10	6	6	—	Scottish Wagon (Limited)		
10	4	6	6	—	Ditto New		
				† Interim.	‡ Per share.		
Last day for this account, April 9; settling day, April 12.							
J. GRANT MACLEAN, Stock and Share Broker.							
Post Office Buildings, Strirling, April 5.							

A MODEL LIQUIDATION.—The report of the Liquidators of the Western Bank of Scotland in its way, a model document.

fact, every charge, and all particulars of calls and payments

either with thatmost clearness, so that those interested
as either as creditors or shareholders, can have no difficulty in
every penny of the money involved in the liquidation. It
has been in process of liquidation for 19 years, and at the
last year there was an undistributed surplus of 10,976, after
1956, in the shape of expenses; including four years' liquid
salary, inspectors' fees, and law charges for closing the liquidation.
The National Bank of Scotland has taken over the remaining
assets and liabilities, amounting to very small sums, so that
liquidators' task is at an end. After deducting an honorarium
the committee and a small sum for contingencies, enough
the surplus to allow a final return to the shareholders of

share. During the 19 years through which the liquidation liabilities to the amount of £ 124 405/ have been paid off

the amount of 125¢. per share have been made on the share

yielding 2,054,566 $\frac{1}{2}$ l., of which 877,177 $\frac{1}{2}$ l. has since been repaid. The total expenses of liquidation have amounted to 118,797 $\frac{1}{2}$ l.

48,703*l.* has been paid as salaries and 57,787*l.* as law expenses contrasted with what is known of English liquidations of

character, is remarkably moderate; and when it is consid

the loss on the recovery of the assets of the bank has been more than 28% 000%, it is obvious that the liquidation must be

conducted with great judgment and care. Otherwise it would have been impossible for the Government to have paid all expenses.

also to have returned nearly two-fifths of the calls made

shareholders.

APRIL 7. 1877.

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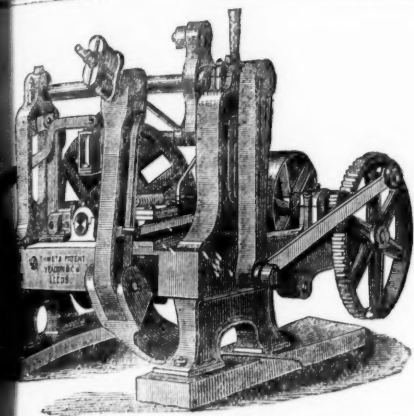
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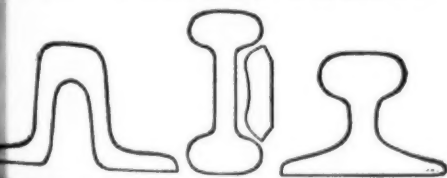
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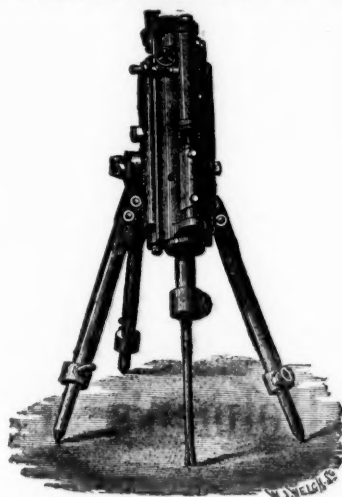
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THE EXTRAORDINARY ADVANCE in the PRICE of COALS
has DIRECTED more ATTENTION to WATER POWER, and to the
BEST MANNER of APPLYING IT. For many years it has been, to a great
extent, neglected and undervalued. One great objection to it has been the variable
nature of most streams in these countries, having abundance of water during the
winter half-year, and very little in the dry season. No kind of wheel hitherto
known was able to give the proper proportion of power from the smaller quan-
tities of water, so that it became the practice very generally to use steam entirely
during the summer half of the year, letting the water go to waste. This is now
completely prevented, and the full available power can be obtained from a stream
at every season by using

Mac Adam's Variable Turbine.

This wheel (which is now largely in use in England, Scotland, and Ireland) is
the only one yet invented which gives proportionate power from both large and
small quantities of water. It can be made for using a large winter supply, and
yet work with equal efficiency through all variations of quantity down to a fifth,
or even less if required. It is easily coupled to a steam-engine, and, in this way,
always assists it by whatever amount of power the water is capable of giving, and,
therefore, saves so much fuel.

This Turbine is applicable to all heights of fall. It works immersed in the fall-
water, so that no part of the fall is lost, and the motion of the wheel is not affected
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FOR CONVEYING
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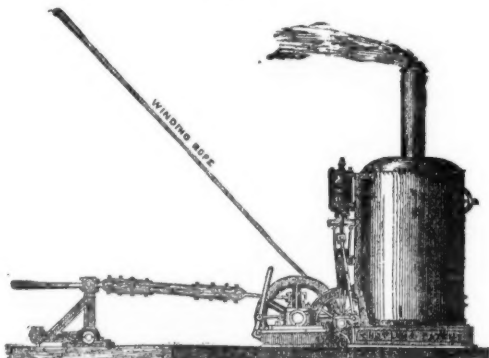
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Obtained the PRIZE MEDALS at the "ROYAL EXHIBITION" of 1851; at
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E.C., MANUFACTURERS AND ORIGINAL
PATENTEES OF SAFETY-FUSE, having been in-
formed that the name of their firm has been attached to
fuse not of their manufacture, beg to call the attention of
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EVERY COIL OF FUSE MANUFACTURED by them has TWO SEPARATE
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Prize Medal—International Exhibition, 1862.



**CHAPLIN'S PATENT
PORTABLE STEAM ENGINE
FOR PUMPING AND WINDING.**
SPECIALLY ADAPTED FOR PITS, QUARRIES, &c.
SIMPLE AND STRONG; require NO FOUNDA-
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EASILY ERECTED OR REMOVED.
Sizes, from 2 to 30-horse power.

Steam Cranes, 1½ to 30 tons, for railways, wharves,
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by steam.

Stationary Engines, 1 to 30-horse power, with or
without gearing.

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The "SPECIAL" DIRECT-ACTING STEAM PUMP WITH Holman's Patent Self-acting Exhaust Steam Condensers.

UPWARDS OF 12,000 "SPECIAL" STEAM PUMPS ARE IN USE

After eight years of successful application for all purposes to which steam-driven pumps can be applied, THE "SPECIAL" STEAM PUMP STILL MAINTAINS THE FIRST POSITION IN THE MARKET, notwithstanding that it alone—of all direct-acting pumps—has been subjected to the great variety of severe tests that must be encountered in such a period of time. Some valuable improvements have been suggested in the course of a long experience, and their adoption has rendered the apparatus at once the simplest and most certain in action. There is absolutely no extraneous gear, and the steam cylinder is no longer than the pump. The valves are of easy access, and are suited for pumping fluids and semi-fluids of almost any consistency.

Holman's Condenser

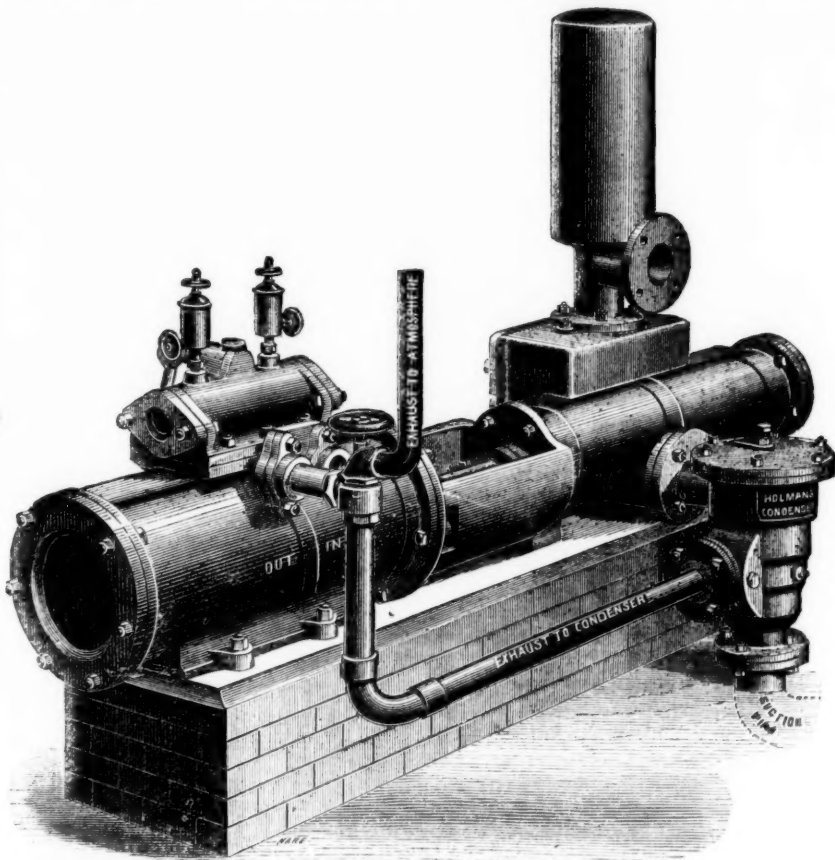
Turns waste steam into GREAT POWER.

SAVES HALF ITS COST IN PIPES AND CONNECTIONS.

PREVENTS ALL ESCAPE OF STEAM IN MINES OR ELSEWHERE.

REQUIRES NO EXTRA SPACE.

SAVES TWENTY TO FIFTY PER CENT. OF FUEL.



WILLIAM ELLIOT, Esq., of the Warrington and Coal Company, writes under date Sept. 1875, as follows:—"We have now THIRTY of your SPECIAL STEAM PUMPS in operation at the various collieries under my charge—of them employed pumping water out of pits to the depth of 50 fms.—others employed in pits, and a good many feeding Boilers. I have no hesitation in saying that we have found the Cheapest and Best Pumps of the kind we have tried. I can with confidence recommend them to intending purchasers."

Messrs. BURT, BOULTON, and HAYES, Chemical Manufacturers, of London, use FORTY of the "SPECIAL" STEAM PUMPS at their works.

HOLMAN'S CONDENSER

Are made to suit any size and kind of Steam Pump. They form a part of the suction pipe of the Pump, and while they effectually condense the exhaust steam they produce an average vacuum of 10 lbs. per square inch on a steam piston, increasing the duty of the Pump and effecting a saving in fuel of from thirty per cent.

In Mining operations these Condensers are of great value.

All Boiler Feeders are recommended to be fitted with these Condensers, as not only does exhaust steam utilised in heating the boiler water, but is returned with it into the boiler.

GREAT REDUCTION IN PRICES.

The following sizes are suitable for low and medium lifts:—

Diameter of Steam Cylinder...In.	3	4	4	4	5	5	5	6	6	6	6	7	7	7	7	7	8	8	8	8	8	9	9	9	9	9	10
Diameter of Water Cylinder...In.	1½	2	3	4	3	4	5	3	4	5	6	3	4	5	6	7	4	5	6	7	8	5	6	7	8	9	10
Length of Stroke.....In.	9	9	9	9	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	18	12	12	12	18	24	30
Gallons per hour	680	815	1830	3250	1830	3250	5070	1830	3250	5070	7330	1830	3250	5070	7330	9750	3250	5070	7330	9750	13,000	5070	7330	9750	13,000	16,500	20,000
Price of Special Pump...£	16	18	20	25	22 10	27 10	32 10	25	30	35	40	30	35	40	45	50	40	45	50	55	65	50	55	60	70	85	100
Extra, if fitted with Holman's Condenser and Blow-through Valve	£7	£7	£9	£11	£8 10	£11 10s	£12 10s	£9	£12	£15	£15	£10	£13	£15	£16	£22	£13	£16	£16	£22	£22	£16	£16	£23	£24	£35	£45

CONTINUED.

Diameter of Steam Cylinder..In.	10	10	10	10	12	12	12	12	12	12	14	14	14	14	14	14	16	16	16	16	16	16	18	18	18	18	20
Diameter of Water Cylinder..In.	7	8	9	10	6	7	8	9	10	12	7	8	9	10	12	14	8	9	10	12	14	9	10	12	14	16	18
Length of Stroke.....In.	12	18	24	24	18	18	18	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Gallons per hour	9750	13,000	16,519	20,000	7330	9750	13,000	16,519	20,000	30,000	9750	13,000	16,519	20,000	30,000	40,000	13,000	16,519	20,000	30,000	40,000	16,519	20,000	30,000	40,000	50,000	60,000
Price of Special Pump...£	65	75	90	100	75	80	85	110	120	140	110	120	130	140	160	180	140	150	160	180	200	180	190	210	230	250	270
Extra, if fitted with Holman's Condenser and Blow-through Valve	£23	£24	£35	£35	£20	£27	£27	£38	£38	£50	£28	£28	£40	£40	£55	£55	£28	£40	£40	£55	£55	£45	£45	£55	£55	£65	£75

Intending purchasers of Steam Pumps would do well to observe the great length of stroke, short steam cylinder, and short piston of the "Special" Steam Pump, as compared with the short stroke, long steam cylinder, and long piston of the Pumps of other makers, as the efficiency and durability of the machine, and the space occupied by same, greatly depend upon this. The advantage of long strokes will be obvious when purchasers are reminded that each set of valves and delivery valves of a "Special" Steam Pump with 24 in. stroke, running at 120 ft. per minute, would open and close only 30 times per minute, as against 120 times per minute in a Pump with only 6 in. stroke performing same duty.

The "Special" Steam Pump can be worked by Compressed Air as well as by Steam. HUNDREDS of these PUMPS are USED for HIGH LIFTS IN MINES, for which purpose they are made with 21, 24, 26, 28, 30, and 32-inch Steam Cylinders, and 36 48 and 72-inch Strokes.

The following Testimonial gives one Example of the Power Gained by the action of Holman's Patent Condensers:—

NORLEY COLLIERY, WIGAN.
Messrs. TANGYE BROTHERS AND HOLMAN.
GENTLEMEN,—I have great pleasure in recording my entire satisfaction with the working of the Holman's Patent Steam Pump Condenser which you have supplied to us. The complete condensation of the steam is, apart from its value in the strict economical sense, a most valuable feature in the drainage of underground work.

Inds. The perfect manner in which this important result is accomplished by your Condenser is extremely creditable to you, and merits the thanks and commendation of the Mining Engineer. When we start the "Special" Steam Pump the Condenser commences working automatically, and maintains a constant vacuum of 10½ lbs. per square inch, even when we run the Pump upwards of 80 strokes (105 feet) per minute. It may perhaps be interesting to you to know that when we were running the Pump at 84 strokes (105 feet) per minute, the steam gauge

indicating a steam pressure of 36 lbs. per square inch, 80 yards from the Pump and the Condenser vacuum gauge on the exhaust pipe indicating a steady vacuum of 21½ inches, I turned the exhaust steam from the Condenser into the atmosphere, when the speed at once fell to 44 strokes per minute. The economy thus shown is really so great that the cost of the Condenser must be repaid in a very short time. (Signed) J. THOMSON.

NORTH OF ENGLAND HOUSE ... TANGYE BROTHERS AND RAKE, ST. NICHOLAS BUILDINGS, NEWCASTLE-ON-TYNE.
SOUTH WALES HOUSE... TANGYE BROTHERS AND STEEL, Traders Place, NEWPORT, Mon.; and Oxford Buildings, SWANSEA.

7. 1877.]

BLAKE'S PATENT STEAM PUMP.

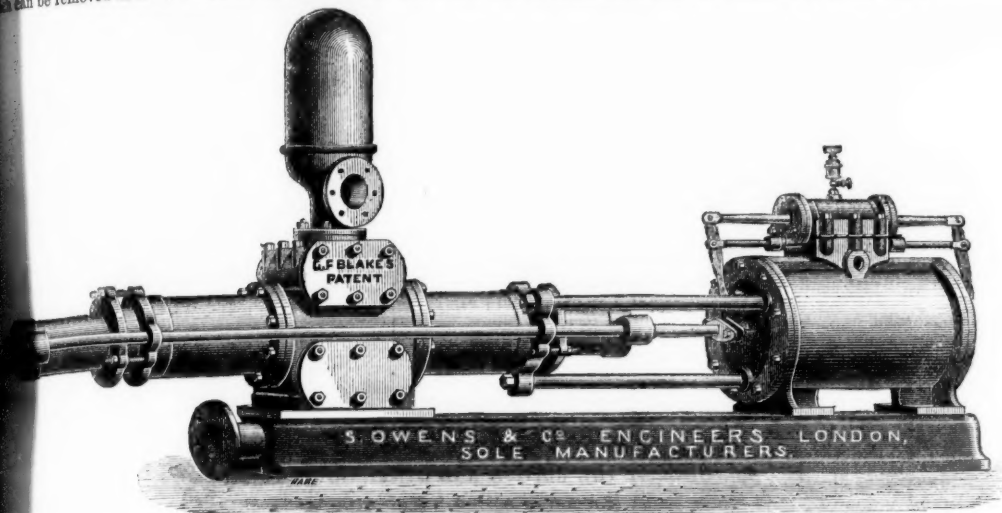
MORE THAN 10,000 IN USE.

SOLE MAKERS FOR GREAT BRITAIN,

S. OWENS & CO.,

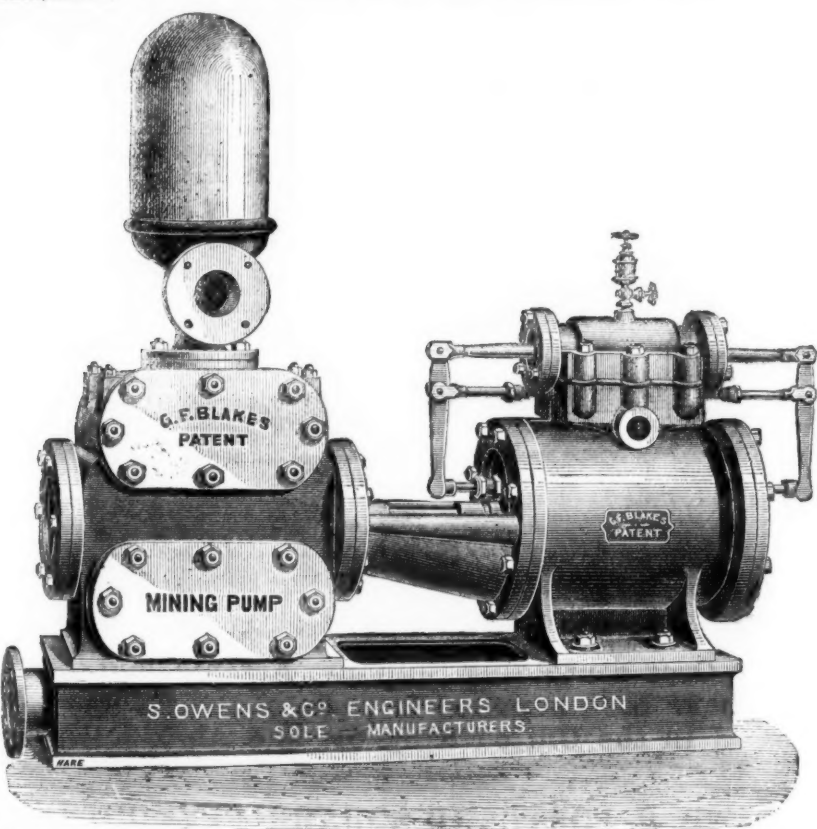
Hydraulic and General Engineers, Whitefriars-street, London;
And at 195, Buchanan-street, Glasgow (W. HUME, AGENT).

PUMPS from their SIMPLICITY, RELIABILITY, DURABILITY, and ECONOMY are SPECIALLY SUITED FOR MINING PURPOSES, where large quantities of water require to be raised from great or medium depths with CERTAINTY. They are constructed in their construction, throwing a constant stream of water, can be made of any stroke to suit the space in which they work, can be arranged with any combination of steam and water cylinders to suit the pressure and lift against which it is to work them, are made of the very best materials and highest class of workmanship, and all working parts can be readily replaced by any ordinary workman, and replaced if necessary by a duplicate part (all such being interchangeable) in the shortest possible time. For situations where gritty and sandy water has to be pumped the DOUBLE-PLUNGER PATTERN is recommended. Where space is limited the PISTON PUMP is better suited, a novel feature of which is the PATENT REMOVEABLE LINING, which can be removed in a few minutes and substituted with a new one, without disturbing any other part of the pump.



Blake's Improved Double-plunger Steam Pump.
S. OWENS AND CO.,

Let the BLAKE STEAM PUMP before the mining world, believe they are offering the BEST, MOST RELIABLE, and ECONOMICAL PUMP that has yet been made, and solicit an inspection of various sizes in operation at their works, Whitefriars-street, Fleet-street, London.



Blake's Improved Mining Pump, with Patent Removeable Lining to Pump Cylinder,

Any combination of these Pumps may be had to suit circumstances. The following are some of the sizes SUITABLE FOR MINING PURPOSES:-

	12	12	12	12	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	24	24
Steam cylinders, in.	3	4	5	6	4	5	6	4	5	6	8	4	5	6	8	5	7	8	9	6	8
Water cylinders, in.	18	18	18	24	24	24	24	24	24	24	24	24	30	30	30	30	36	36	36	42	42
Stroke, in.	30	30	30	30	25	25	25	22	22	22	22	22	22	22	22	20	20	17	17	17	15
Capacity in gallons per hour, approximately	1440	2610	4200	5940	2940	4620	6600	2646	4158	5940	10620	2646	5160	7500	13260	4586	9000	12360	15660	6720	12000

PRICES FOR THE ABOVE, OR ANY SPECIAL SIZE, AND ILLUSTRATED CATALOGUES FURNISHED ON APPLICATION

PATENT CONDENSERS

be supplied for any size pump to effect a saving of fully 30 per cent. in the consumption of fuel, greatly increasing their efficiency

The Blake Pump will work under water, and as efficiently with compressed air as with steam.

BLAKE'S DONKEY PUMPS FOR FEEDING BOILERS KEPT IN STOCK.

PATENT

"INGERSOLL ROCK DRILL,"

LE GROS AND CO.,

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We claim 40 per cent. greater effective drilling power, and offer to compete with any machine of its class.

See following extracts from the reports of Judges in awarding Medals:-

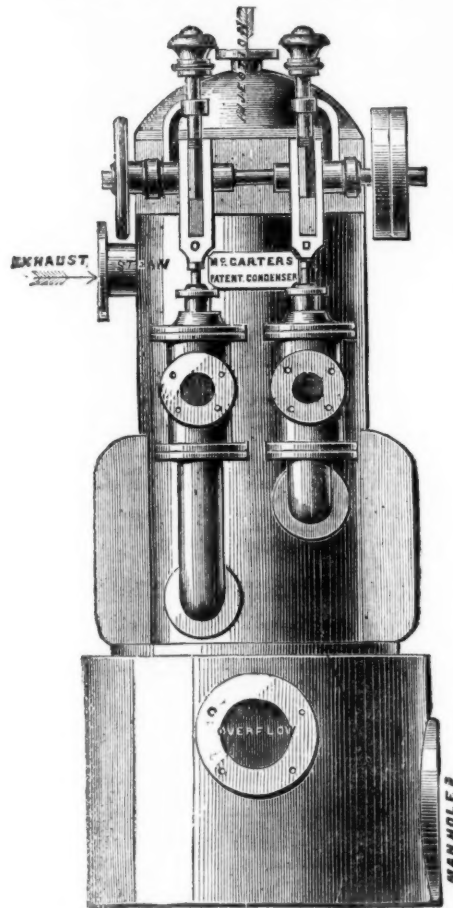
- "2. Its simple construction ensures durability, &c.
- "4.—The steam or air cushions at each end of cylinder effectually protect from injury.
- "5. Its having an automatic feed, giving it a steady motion, &c.
- "6. Its greater steadiness and absence of jar and vibration experienced in other drills, which is very destructive to their working parts, &c.
- "7. Its greater power is some FORTY PER CENT. in favour of the Ingersoll."

Medals awarded for several years in succession "For the reason that we adjudge it so important in its use and complete in its construction as to supplant every article previously used for accomplishing the same purpose."

Estimates given for Air Compressors and all kinds of Mining Machinery. Send for Illustrated Catalogues, Price Lists, Testimonials, &c., as above.

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KIRK, RAMSDEN, AND CO.
(LIMITED)
HUDDERSFIELD.



These Condensers can be placed inside or outside of the engine-house. They draw their own injection water, and require no foundation. Specially adapted to Pumping and Winding Engines, effecting a saving from 20 to 30 per cent. in coal, and increases the power of the Engine.

Engineers, Millwrights, Founders,
AND
FORGE PROPRIETORS.

Makers of Pumping, Winding, and Blowing Engines,
Condensing and Non-condensing.
Horizontal and Beam Engines for all purposes.

IN THE SPRING Parr's Life Pills are used by Thousands.—They clear from the system all hurtful impurities, promote appetite, aid digestion, purify the blood, and keep the bowels regular. PERSONS SUFFERING from HEADACHE, Liver Complaints, Pains in the Shoulders and the Back, Gout, Rheumatism, and General Debility are particularly recommended to try

PARR'S LIFE PILLS

They have never been known to fail in affording immediate relief.

BLAKE'S NEW PATENT STONE BREAKER.

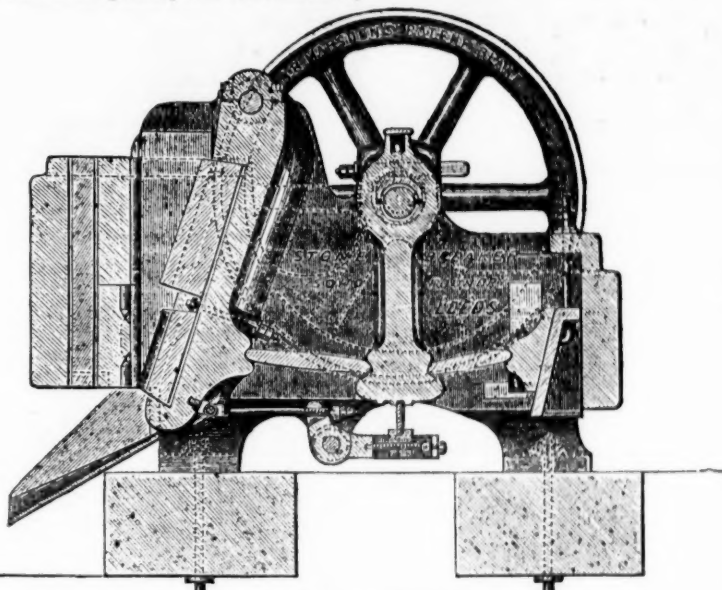
H. R. MARSDEN,

ORIGINAL PATENTEE, AND ONLY MAKER IN THE UNITED KINGDOM.—2000 IN USE

These Machines are in extensive use amongst the Tin, Copper, Lead, and other Mines, and are showing a clear saving of 4d. and 6d. per ton over the ordinary mode of hand spalling, besides a saving of stamping power equal to 30 per cent., which is a considerable saving. They are already well known to the mining world, and can be seen in operation at some of the leading Cornish Mines. For breaking the elvan rock they have established a decided supremacy over other Machinery.

Exclusively adopted by Her Majesty's Government, and by most Continental Governments.

Machines for Hand and Steam Power, specially designed and largely used for Crushing Pyrites, Limestone, Cement, Coal, Rocks, Ganister, &c., at all the principal works in the Kingdom.



EXTRACTS FROM TESTIMONIALS.
"They occupy an important position as labour-saving Machines."—*Architect*.
"The Machine is well designed, simple, but substantially made, and is capable of reducing any material to fine gravel, such as copper ore, and is certainly preferable to the stamps in use for that purpose."—*Mining Journal*.
"Your Machine will crush from 60 to 120 tons of hard limestone per day of 10 hours."

This illustration shows my new patent REVERSIBLE Cubing Jaws, which are made in upper and lower sections, and the backs planed, so that when the bottom part of the lower section becomes worn it can be turned upside down, and thus made equal to new. This process does not require the aid of skilled labour, the white metal being entirely dispensed with.
THESE JAWS WILL WEAR FOUR TIMES longer than any other, and they can be renewed at a fractional cost.

CATALOGUES, TESTIMONIALS, &c. (in the French or German language, if required), on application to the sole maker of "Blake's" Stone Breaker:—

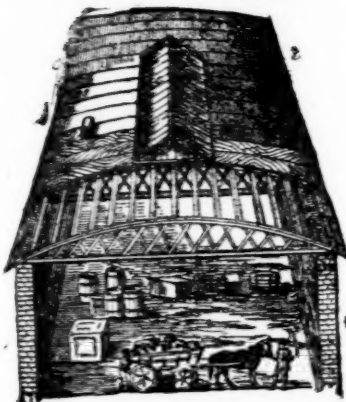
H. R. MARSDEN, SOHO FOUNDRY, LEEDS, ENGLAND.

Used by all the Great Mining Companies in the World, and are shown Testimonials to effect Saving of FIFTY per cent over every other system.
Awarded 62 Gold and Silver Medals:—

Paris, 1867.
Santiago, 1869.
Leeds, 1875.
Leicester, 1868.
Cardiff, 1872.
Bolton, 1872.
Ayr, 1873-4-5-6, &c.

"No Machine is equal to yours, combining as it does great power, simplicity of construction, and cheapness."—*Mr. Marsden's Stone Breakers* are so thoroughly appreciated that it is unnecessary for us to dwell on construction or speak of their merits.—*Engineer*.
"By the use of your Machine we have reduced the time and forming road material to one-half its former cost."—*Our 16 by 7 Machine has broken 4 tons of hard stone in 30 minutes for fine road metal, free from dust.*

M'TEAR AND CO'S CIRCULAR FELT ROOFING,



FOR GREAT ECONOMY AND CLEAR WIDE SPACE.
For particulars, estimates and plans, address,—
M'TEAR & CO.,
ST. BENET CHAMBERS,
FENCHURCH STREET,
LONDON, E.C.;
4, PORTLAND STREET,
MANCHESTER;
OR
CORPORATION STREET,
BELFAST.

The above drawing shows the construction of this cheap and handsome roof, now much used for covering factories, stores, sheds farm buildings, &c., the principal of which are double bow and spring girders of best pine timber, sheathed with $\frac{1}{2}$ in. boards, supported on the girders by pulleys running longitudinally, the whole being covered with patent waterproof roofing felt. These roofs so combine lightness with strength that they can be constructed up to 100 ft. span without centre supports, thus not only affording a clear wide space, but effecting a great saving both in the cost of roof and uprights.
They can be made with or without top-lights, ventilators, &c. Felt roofs of any description executed in accordance with plans. Prices for plain roofs from 30s. to 6s. per square, according to span, size, and situation.
Manufacturers of PATENT FELTED SHEATHING, for covering ships' bottoms under copper or zinc.
DRY HAIR FELT, for deadening sound and for covering steam pipes, thereby saving 25 per cent. in fuel by preventing the radiation of heat.
PATENT ASPHALT ROOFING FELT, price 1d. per square foot.
Wholesale buyers and exporters allowed liberal discounts.
PATENT ROOFING VARNISH, in boxes from 3 gallons to any quantity required 8d. per gallon.



By a special method of preparation, this leather is made solid, perfectly close in texture, and impermeable to water; it has, therefore, all the qualifications essential for pump buckets, and is the most durable material of which they can be made. It may be had of all dealers in leather, and of—

I. AND T. HEPBURN AND SONS,
TANNERS AND CURRIERS, LEATHER MILLBAND AND HOSE PIPE MANUFACTURERS,
LONG LANE, SOUTHWARK, LONDON
Prize Medals, 1851, 1855, 1862, for
MILL BANDS, HOSE, AND LEATHER FOR MACHINERY PURPOSES.

THE GREAT ADVERTISING MEDIUM FOR WALES.
THE SOUTH WALES EVENING TELEGRAM
(DAILY), and
SOUTH WALES GAZETTE
(WEEKLY), established 1857,
the largest and most widely circulated papers in Monmouthshire and South Wales.
Chief Offices—NEWPORT, MON.; and at CARDIFF.

The "Evening Telegram" is published daily, the first edition at Three P.M., the second edition at Five P.M. On Friday, the "Telegram" is combined with the "South Wales Weekly Gazette," and advertisements ordered for not less than six consecutive insertions will be inserted at an uniform charge in both papers.
P.O.O. and cheques payable to Henry Russell Evans, 14, Commercial-street, Newport, Monmouthshire.

MINING PROSPECTUSES AND ANNOUNCEMENTS OF PUBLIC COMPANIES should be inserted in the BARNSTAPLE TIMES, published every Tuesday, and in the DEVON POST, published every Saturday, as these papers circulate largely throughout Devon and Cornwall, where many thousands of investors reside. Legal and Public Companies' advertisements, 6d. a line each insertion; Trade and Auctions, 4d. a line; Wanted, &c., 2d. words, 1s. Published by J. B. JONES, Southport-street, Barnstaple, Devon, to whom all orders by post or telegraph should be sent.

BRYDON AND DAVIDSON'S ROCK DRILL

SELECTED BY THE BRITISH AND OTHER GOVERNMENTS.

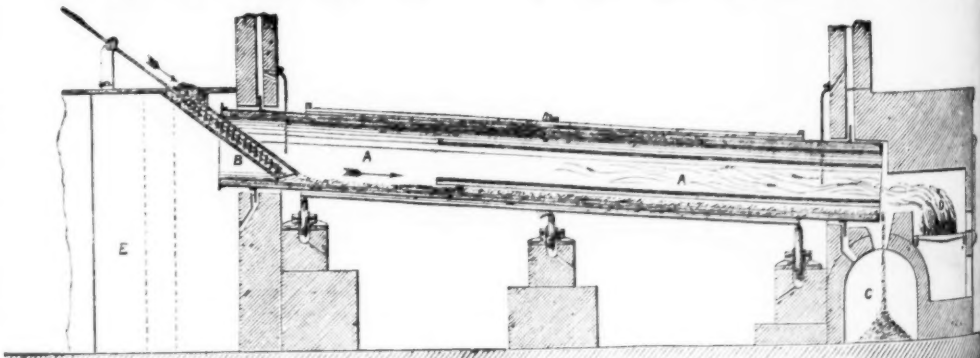
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